McGraw-Hill Reading Wonders

CCSS Reading/Language Arts Program

Research Base Alignment

A Summary of Key Research and Demonstration of Program Alignment

McGraw Hill

Introduction

If reading opens the door of opportunity, will all children be able to cross the threshold to reading success? At McGraw-Hill Education we have always answered *Yes* to this question. It is our tradition to help every child learn to read, and to help every instructor teach reading in the most effective manner possible – a practice that continues today with the *McGraw-Hill Reading Wonders Common Core Standards Reading/Language Arts* program.

The *McGraw-Hill Reading Wonders* program will guide children across the literacy threshold to mastery of the Common Core State Standards to become successful in college and in the workforce – because *Reading Wonders* is anchored in salient and consequential research about what works. We know that learning to read and teaching reading is work that requires the most effective materials because reading is foundational for all other learnings. In fact, The National Institute for Literacy's Partnership for Reading (2000) states that "Success in school starts with reading." Increasingly, federal, state, and local requirements in every area focus on the need for research-verified instructional strategies, methods, and approaches, and research is now available that suggests how to give each child a good start toward achieving success in reading. McGraw-Hill has stepped up to the challenge by incorporating highly-regarded research related to effective reading instruction during the development of the *McGraw-Hill Reading Wonders* program.

The teaching of reading has steadily evolved over the years, and the most recent initiative designed to 'raise the bar' for literacy is found within the *Common Core State Standards* in *English Language Arts*. Developed by experts in collaboration with researchers, leaders from states' education departments, teachers and school administrators, the *Common Core State Standards* incorporate evidence-based practices and content extracted from the most academically rigorous models across the state to ensure that students possess the literacy skills necessary for success in college and in workforce training programs.

It is important to note that the *Common Core State Standards* (referred to as the *Standards* throughout the document) are meant to provide descriptive ideals and guidelines. They represent what can and should be accomplished, but leave implementation to states and school districts. Elementary teachers have always worked hard to motivate their students to read and understand text, build knowledge, effectively communicate both verbally and in written form, and acquire advanced vocabulary; however, many teachers have limited resources to devote to helping students acquire these skills, or they struggle to find appropriate resources to meet the needs of students. With the advent of the *Standards* and the enhanced vision toward refining and strengthening literacy instruction, teachers and administrators are no doubt further challenged to meet these goals of excellence. McGraw-Hill's *Reading Wonders* comprehensive reading program was designed to not only satisfy the *Standards* but also to incorporate high-quality research about what works.

Common Core State Standards in English Language Arts: A Summary of Key Points

Reading: Students should demonstrate the ability to extract deep meaning and critically analyze information from texts of increasing complexity. Text should include a diverse genre of classic and contemporary literature, and incorporate content deemed critical for achieving high standards of literacy.

Writing**:** Students should demonstrate the ability to produce written arguments based on substantive claims, sound reasoning, and relevant evidence. The ability to conduct research, synthesize information, and report findings through a written analysis is critical.

Speaking and Listening**:** Students should demonstrate the ability to evaluate and present ideas and evidence through listening and speaking as well as through media. Additionally, students should develop skill in engaging in formal and informal academic discussion.

Language**:** Students should increase academic vocabulary. Students should use formal English while writing, but must also be able to make informed choices among the various ways to express themselves through language.

Media and Technology**:** Skills related to media use and production of media are interwoven throughout the *Standards* (http://www.corestandards.org/about-the-standards/key-points-in-english-language-arts)

It is vital that existing curricula incorporate the rigorous content and knowledge encapsulated within the *Standards*. This paper provides a user-friendly summary of key research findings across components of reading, and adds a sample demonstration of alignment to the *Standards* by providing research and specific examples from *Reading Wonders*. The majority of presented research was obtained from the following sources:

- Developing Early Literacy: Report of the National Early Literacy Panel (NELP). This document synthesizes research on the development of early literacy skills for children from birth to age five. The purpose of NELP was to provide information to help teachers and parents support young children's early literacy development and to contribute to educational policy decisions (National Literacy Panel, 2008).
- Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups (National Institute of Child Health and Human Development [NICHHD], 2000). This source presents an extensive, detailed research review related to five broad categories. In cases where the data were of sufficient quality and uniformity, research results were summarized in a meta-analysis, a method for statistically combining research results across an entire body of research studies.
- Preventing reading difficulties in young children, a review of research on early childhood reading commissioned by the National Research Council (Snow, Burns, & Griffin, 1998). This source represents a broad-ranging research summary and review, but without inclusion of specific details of the research.
- Writing to Read: Evidence for How Writing Can Improve Reading. A Report from the Carnegie Corporation of New York (Graham & Herbert, 2010). This document provides a meta-analysis of research on the effects of specific types of writing interventions found to enhance students' reading skills.

- Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools. A Report from the Carnegie Corporation of New York (Graham & Perin, 2007). This report provides a review of research-based techniques designed to enhance the writing skills of 4th to 12th grade students.
- Improving Reading Comprehension in Kindergarten Through 3rd Grade: A Practice Guide. (Shanahan, Callison, Carriere, Duke, Pearson, Schatschneider, & Torgesen, 2010). This article contains recommended research-based practices in reading, according to level of evidence assigned by a panel of experts.

Elements of Literacy Instruction

Literacy programs must be based on scientific evidence related to elements that have been identified as essential in literacy instruction:

1. Phonological awareness
2. Phonics
3. Fluency
4. Vocabulary and Language
5. Text Comprehension
6. Writing

Incorporating Elements of Literacy into the *Standards*

Phonological awareness, phonics, and fluency are represented in the *Standards* as *Foundational Skills*. The *Standards* note: "these foundational skills are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines" (National Governors Association Center for Best Practices, 2010, p 15). Vocabulary, in conjunction with conventions of English and knowledge of language, is contained within the *Language* Standards. Comprehension is represented in the *Reading Standards for Literature* and *Reading Standards for Informational Text*

Comprehension of Literature and Informational Text

"Good instruction is the most powerful means of developing proficient comprehenders and preventing reading comprehension problem"

-Rand Reading Study Group, 2002, p 29.

What is text comprehension?

The National Assessment of Educational Progress (2010) defines reading as, "an active and complex process that involves: understanding written text; developing and interpreting meaning; and using meaning as appropriate to type of text, purpose, and situation" (p iv).

Comprehension is often identified as the primary goal of reading: children and adults read in order to understand. If children can "read" words but cannot understand them, they are merely decoding. Real reading requires understanding. Over the past 30 years, reading researchers have come to understand that such comprehension is not merely passive, but is the result of active involvement on the part of the reader. Reading involves mental processes, or cognitive targets, that underlie reading comprehension. These include the ability to locate and recall information, integrate and interpret text, and to critique and evaluate (National Center for Education Statistics, 2011, p 5).

Text Comprehension and Text Complexity

A notable shift in the *Standards* is the expectation that students become independent and proficient readers of increasingly complex text. Traditionally, educators have attempted to limit text complexity to ensure that students could understand what they were reading; however, asking students to read relatively easy texts is not sufficient for enabling them to independently and successfully negotiate the types of text they will encounter in college, training programs, and in the workforce. To illustrate the importance of text complexity, the *Standards* summarize the 2006 ACT Inc. research report entitled *Reading Between the Lines*, which revealed that:

> *What chiefly distinguished the performance of those students who had earned the benchmark score of better from those who had not was not their relative ability in making inferences while reading or answering questions related to particular cognitive processes, such as determining main ideas or determining the meaning of words and phrases in context. Instead, the clearest differentiator was the students' ability to answer questions associated with complex texts (NGAC, the Standards, Appendix A, p. 3).*

The findings from this study demonstrate that comprehension strategies, in isolation, are not sufficient for fostering students' comprehension skills. Students must be exposed to complex text structures and explore the meaning of the text itself. The *Standards* assess a text's degree of complexity by considering the overall readability of the text (e.g. Lexile measures), the quality of the text, (e.g., levels of meaning, structure, language, and knowledge demands), and important reader variables (e.g., motivation, knowledge and experiences, purpose), all factors that play a role in students' facility in comprehending text (Rand Reading Study Group, 2002). As the *Standards* emphasize that all students read and comprehend a variety of text structures within the appropriate text complexity grade band, it thus becomes crucial to provide students with the tools and strategies needed to grapple with the varieties and complexities of text structures they will encounter.

Text Complexity and CLOSE Reading

As students encounter varieties of complex text structures, they are required to approach challenging text in a new way. As such, the *Standards* emphasize a shift in literacy instruction to include the close and careful

examination of text itself, or the *close* reading of text. *Close* reading is an active process that involves the careful and thorough analysis and evaluation of the key ideas and details of a text, along with consideration of the text's craft and structure (Piercy, 2011). Complex text requires a slow and deep analysis. Vocabulary acquisition, development of logic and higher-order thinking skills, understanding of text and sentence structure, activation of prior knowledge, and the ability to summarize and organize information are several of the key skills students must utilize in deciphering complex text (Law, 2008).

Readers utilize a variety of specific skills to facilitate the *close* reading of text:

- Paraphrasing text, sentence by sentence. This involves translating an author's wording into an alternative wording.
- Explicating the thesis of a paragraph, by: 1) stating the main point; 2) elaborating in greater detail; 3) providing examples of the author's meaning; and 4) illustrating the author's meaning by creating metaphors, analogies, pictures, or diagrams.
- Analyzing the logic of text by answering key questions, including: identifying the main purpose and the most important information; and stating the main inferences and implications.
- Evaluating or accessing the logic of text by applying standards such as clarity, precision, accuracy, relevance, and significance (Elder & Paul, 2004, p 37).

It is critical that students develop *close* reading skills, as the *Standards* strongly emphasize that students gather evidence, knowledge, and insight from what they read. Through the *close* reading of text, students utilize *text-based evidence*, or information gleaned solely from text, to support their analysis, interpretations, and arguments. While the *Standards* do not completely discount the role of students' experience and background knowledge, these factors should not replace focus on the text itself.

Text Comprehension and Quality of Text

The *Standards* emphasize not only the use of complex text, but also the quality of text. That is, texts must have recognized value, be worth reading, and include the variations of form documented to enhance comprehension (e.g. lexical quality). Texts that have recognized value include "classic or historically significant texts as well as contemporary works of comparable literary merit, cultural significance, and rich content" (NGAC, The *Standards*, Appendix B, 2010, p. 2). Lexical quality refers to the "extent to which the reader's knowledge of a given word represents the word's form and meaning constituents and knowledge of word use that combines meaning with pragmatic features" (Perfetti, 2007, p. 359). High quality lexical representations are precise, redundant, and flexible (Perfetti, 2007, p. 360). Research has shown that high lexical quality positively affects reading skill, including comprehension (Andrews & Bond, 2009; Perfetti, 2007).

Why is text comprehension instruction important?

"Strong reading comprehension skills are central not only to academic and professional success, but also to a productive social and civic life" (Shanahan, Callison, Carriere, Duke, Pearson, Schatschneider & Torgesen, 2010, p. 5). The ability to comprehend text is central to learning concepts within content areas, such as science, social studies, and mathematics, and also later in life as students enter the workforce.

One of the implications of the *Standards* is that students are required to read and comprehend a variety of text types. Elementary curricula reflect an equal distribution of 50 percent literary and 50 percent informational text, and incorporate readings in English Language Arts, science, social studies, and the arts. While similar processes are employed while reading texts of *any* type, literary and informational texts have particular features and structures that call upon specific cognitive processes to aid students in their comprehension. For instance, the abstraction found in poetry requires the reader to comprehend metaphors, personification, and imagery, critical thinking skills that are often not required for comprehending other types of text (NAEP Reading Framework, 2011, p. 9). A novel includes specific structural elements, including characters, a setting, a plot or theme, a conflict, and a resolution, collectively called a story grammar. The text structure

of informational or expository text can vary, according to the text's purpose. For example, persuasive text may present cause and effect relationships, while a descriptive text may provide attributes or information that describes the topic (NAEP Reading Framework, 2011, p. 9). Analysis of the varieties of text and text structures is necessary for students to comprehend what they read.

Effectiveness of comprehension instruction. In examining research on reading comprehension instruction, the National Reading Panel (NRP) identified 16 broad categories, or methods, of comprehension instruction. Of these, seven methods were identified as having "a firm scientific basis for concluding that they improve comprehension in normal readers" (NICHHD, 2000, p. 4-42)– demonstrating that comprehension can be improved through explicit, formal instruction. Five of these methods were in use by the third-grade level, and are thus research-verified as appropriate and effective for instruction in the early elementary grades. Similarly, a review of research on early childhood reading commissioned by the National Research Council (NRC) concluded that "Explicit instruction in comprehension strategies has been shown to lead to improvement" (Snow, Burns, & Griffin, 1998, p. 322).

Effects on specific skill areas. According to the NRP, research "favors the conclusion that teaching of a variety of reading comprehension strategies leads to increased learning of the strategies, to specific transfer of learning, to increased memory and understanding of new passages, and, in some cases, to general improvements in comprehension" (NICHHD, 2000, p. 4-52).

Who benefits from text comprehension instruction?

Grade Levels. The NRP's review of research verified the effectiveness of some methods of text comprehension instruction as early as the second- or third-grade level and ranging up to ninth grade (Snow, Burns, & Griffin, 1998, p. 323). More recently the What Works Clearinghouse released a review (Shanahan, et.al., 2010) indicating that reading comprehension could be improved through explicit teaching in grades K-3, consistent with earlier research reviews. A study conducted by Lever and Senechal (2011) found that dialogic reading, or a discussion of text through elaborative questioning, was found to have positive impacts on the structure and content of Kindergarten children's narratives. The *Standards* emphasize text comprehension at all grade levels.

ESL Students. August and Shanahan (2006) state that "instruction in the key components of reading is necessary—but not sufficient—for teaching language-minority students to read and write proficiently in English" (p. 4) and that, "literacy programs that provide support in oral language development in English, aligned with high-quality literacy instruction are the most successful" (p. 4).

Low-Achieving Students. A review of research on the effects of reading interventions for struggling readers (Gersten, Compton, Connor, Dimino, Santoro, Linan-Thompson, & Tilly, 2008) reveals that when provided with explicit instruction, students demonstrated positive effects in five of seven studies that measured reading comprehension. Repeated readings have demonstrated positive effects for students with learning disabilities (Nelson, Alber, & Gordy, 2004).

Common Core State Standards in English Language Arts: Standard for Reading Literature and Informational Text: Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

Examples by Grade

Kindergarten: **Informational Text**

- With prompting and support, ask and answer questions about key details in a text.
- Identify the front cover, back cover, and title page of a book.
- With prompting and support, identify the reasons an author gives to support points in a text.

Grade 3: Literature

- Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.
- Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.
- Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting)

Research Recommendations on Comprehension

Range and scope of instruction

Early Grades. According to the NRC report recommendations for reading instruction in kindergarten through third grade, "Throughout the early grades, reading curricula should include explicit instruction on strategies such as summarizing the main idea, predicting events and outcomes of upcoming text, drawing inferences, and monitoring for coherence and misunderstandings. This instruction can take place while adults read to students or when students read [to] themselves" (Snow, Burns, & Griffin, 1998, p. 323). More recently, What Works Clearinghouse released a review (Shanahan et.al, 2010) citing "strong research evidence" demonstrating that reading comprehension is improved through explicit teaching in grades K-3.

Instructional methods and features

Methods that were identified by the NRP as having "a firm scientific basis for concluding that they improve comprehension in normal readers" (NICHHD, 2000, p. 4-42) and that were used by third grade in the research studies included the following:

- Question answering (17 studies, mostly grades 3–5), in which teachers ask questions about the text
- Question generation (27 studies, grades 3–9), in which students "generate questions during reading" (NICHHD, 2000, p. 4-45)
- Story structure (17 studies, grades 3–6), in which students are instructed in the "content and organization of stories," including use of graphic organizers in conjunction with story content and structure (NICHHD, 2000, p. 4-45)
- Comprehension monitoring (22 studies, grades 2–6), in which students learn how to monitor their own understanding of texts using procedures such as think-aloud
- Cooperative learning (10 studies, grades 3–6), in which "peers instruct or interact over the use of reading strategies" (NICHHD, 2000, p. 4-45)

As stated, a notable shift in the *Standards* is the focus on reading informational text and building content knowledge. Informational text is "expository writing, pieces that argue in favor of one position or another, and procedural texts and documents" (Shanahan, et.al, 2010 p 17). Text-focus teaching has found to be successful in enhancing student learning (McKeown, Beck, & Blake, 2009). Methods identified by Shanahan, et.al, (2010) as having 'strong evidence' include:

- Activating prior knowledge, or predicting (5 studies)
- Questioning (4 studies) when taught in conjunction with other strategies
- Visualization (2 studies)
- Monitoring and clarifying (3 studies)
- Inference training (1 study)
- Retelling (4 studies).

Methods identified by Shanahan, et.al, (2010) as having 'moderate evidence' include:

- Identifying text structure (5 studies, 3 using narrative text, 2 using informational text), in which students were taught to understand text structure through story-mapping, paying attention to story structure during retelling, using cause-effect statements and related clue words, for example.
- Cooperative learning (10 studies)

Many studies have found that repeated readings indirectly impact reading comprehension by facilitating fluency (National Reading Panel, 2000). For example, students' oral reading fluency rates at the beginning of second- and third-grade has been found as the predominant predictor to later reading comprehension achievement (Kim, Petscher, Schatschneider, & Foorman, 2010).

Multiple strategies

In looking at 36 studies featuring instruction that combined a variety of different comprehension methods, the NRP concluded that "Considerable success has been found in improving comprehension by instructing students on the use of more than one strategy during the course of reading" (NICHHD, 2000, p. 4-47). One particular advantage of this approach is its ability to guide students through the kind of "coordinated and flexible use of several different kinds of strategies" that is required for skilled reading (NICHHD, 2000, p. 4-47).

Regular assessment

According to the NRC report, "Conceptual knowledge and comprehension strategies should be regularly assessed in the classroom, permitting timely and effective instructional response where difficulty or delay is apparent" (Snow, Burns, & Griffin, 1998, p. 323).

The Reading Framework for the 2011 National Assessment of Educational Progress specifies that assessment questions measure three cognitive targets for both literary and informational texts:

- Locate and Recall. Students may identify explicitly stated main ideas or may focus on specific elements of a story
- Integrate and Interpret. Students may make comparisons, explain character motivation, or examine relations of ideas across the text.
- Critique and Evaluate. Students view the text critically by examining it from numerous perspectives or may evaluate overall text quality or the effectiveness of particular aspects of the text (National Assessment Governing Board, U.S. Department of Education, 2011, p 40)

The *Standards* emphasize that a significant portion of tasks and questions are text-dependent; that is, the majority of tasks and questions are based solely on the text. "Rigorous text-dependent questions require students to demonstrate that they not only can follow the details of what is explicitly stated but also are able to make valid claims that square with all evidence in the text" (Coleman & Pimentel, 2012, p. 6).

Text Comprehension Research Recommendations	**Demonstration of Alignment in *Reading Wonders***
Students engage in repeated readings to build fluency and comprehension.	Throughout the grades, students engage in repeated readings of different types of texts. In kindergarten and grade 1, teachers read aloud and reread literature and informational Big Books and Interactive Read Aloud selections. Teachers model how to go back into the text to find text evidence to answer text-dependent questions. Students also read and reread the Shared Read

	selections in the Reading/Writing Workshop. They apply foundational skills and begin to build the foundation for close reading of text. Students reread the Shared Read texts to build their fluency skills as well. Grade 1 Teacher's Edition, Unit 2 pages T10-T11, T31; T16-T17, T26-T27 At grades 2 through 6, students reread the Shared Read selections in the Reading/Writing Workshop as part of the close reading routine. The weekly minilessons in the Reading/Writing Workshop provide focused rereadings of the text to help students dig deep for meaning. The Shared Read selections are reread for modeling and practice of fluency. Grade 4 Teacher's Edition, Unit 1 pages TT16-T17, T18-T19, T20-T21, T22-T23, T24-T25, T27 Students reread their Literature Anthology selections and the Leveled Readers to answer text-dependent questions. Grade 4 Teacher's Edition, Unit 1 pages T25A-T25R; T40-T41,T48-T49, T52-T53T56-T57
Students and teachers discuss the meaning of text by utilizing discussion.	*Reading Wonders* provides many opportunities for rich, grade-appropriate, and meaningful discussion of complex texts every week. Teachers lead students in a close reading routine of the Shared Read in the Reading/Writing Workshop, and the selections in the Literature Anthology. They read short, complex texts and stories multiples times and are prompted to ask and answer questions; visualize; reread; make, confirm, and revise predictions; summarize; or make inferences. The teacher models (Talk About It and Teacher Think Aloud), and then guides students as they reread and answer text-dependent questions. Grade 1 Teacher's Edition, Unit 3 pages T16-T17 The meaning of text is further discussed using graphic organizers. Kindergarten through grade 6 graphic organizers are used for note taking and provide another opportunity for students to reread, search for, and organize text evidence in both literature and informational texts. Kindergarten Teacher's Edition, Unit 7 page T27 Grade 3 Teacher's Edition, Unit 1 pages T89, T93C, T93E, T93G, T93K, T93N, T93P, T93R, T240

	Students in all grades also discuss, summarize and synthesize ideas during whole and small group lessons. Teachers can focus students' attention on text evidence and/or provide scaffolding instruction using Access Complex Text activities, Collaborative Conversations, Make Connections boxes, and Respond to Reading questions during Whole Group lessons. They can also use Leveled Readers, Focus on Genre boxes, Gifted and Talented activities, and Literature Circles in Small Group lessons. Grade 3 Teachers Edition, Unit 1 pages T16, T85 T16, T25T, T109, T121-T123 After reading, Wrap Up the Week activities offer ways for students to collaborate and discuss text. These include Research and Inquiry, Text Connections, and Write About Reading activities. Grade 3 Teacher's Edition, Unit 1 pages T162-T163 Students in all grades have the opportunity every week to discuss genre, use comprehension strategies, and summarize by listening to the teacher read stories aloud using Interactive Read Aloud cards. Grade 3 Teacher's Edition, Unit 1 pages T210-T211
Students identify and use texts' organizational structure to facilitate close reading.	All students read multiple stories each week in both the Reading Writing Workshop and Literature Anthology. Kindergarten students participate in Literature Big Book lessons, as well. Through meaningful instruction using complex texts, students identify and use a variety of genres and text structures to find meaning in the informational texts and stories they read. In kindergarten, this instruction is introduced on Days 1 and 2 during the Listening Comprehension lesson using the Big Book, and is taught on Day 3 using the Interactive Read Aloud; and on Day 4 using a second Big Book. Grade 1 students also use the Literature Big Book. Kindergarten Teacher's Edition, Unit 7 pages T22-T26, T30-T31, T44-T45 Students in grades two through six identify and use their texts' organizational structure throughout

	each week during Interactive Read Aloud lessons, Comprehension Skill and Strategy, and Genre lessons. On Days 2, 3, and 4, students focus on organization in many of the Access Complex Text activities during the close reading of the main selection in the Literature Anthology. Grade 3 Teacher's Edition, Unit 4 pages T18-T21, T22-T23, T25A-T25R All grades also use Leveled Readers, Your Turn Practice Book comprehension and genre pages, Workstation Cards, student resources on www.connected.mcgraw-hill.com, and the Tier 2 Comprehension Intervention book to help them identify and use organizational structure of the texts they are reading. Grade 3 Teacher's Edition, Unit 4 pages T10, T12, T14, T18., T20, T22, T,24, T26, T30, T34, T38, T52, T203, T25-T251
Students identify and utilize text-based evidence to support interpretations and analysis of text.	Identifying and evaluating text based-evidence is emphasized as students respond to and generate text-dependent questions. Each of the minilessons in the Reading/Writing Workshop models for students how to find and use text evidence to answer questions and support statements or conclusions made about the text. After modeling, students have the opportunity to engage in guided practice with the teacher to find and interpret text-based evidence. The Your Turn Practice book provides additional texts for students to practice identifying and using text-based evidence to support their responses. Grade 3 Teacher's Edition, Unit 2 pages T16-T17, T18-T19, T20-T21, T22-T23, T24-T25 The Respond to Reading Text Evidence questions in the Literature Anthology and the Leveled readers provide additional opportunities for students to apply finding text-base evidence to support their interpretations and analysis of text. Grade 3 Teacher's Edition, Unit 2 pages T27T , T42-T43, T50-T51, T54-T55, T60-T61 At the end of each week, students are asked to use the evidence they have cited to write an analysis or opinion of the various texts they have read. Grade 4 Teacher's Edition Unit 1 pages T93, T157

Students generate questions during reading to gather evidence and build knowledge.	During the Shared Read in the Reading/Writing Workshop on Day 1, students in grades 2 through 6 discuss the story as they read and reread, and are reminded by the teacher to use comprehension strategies to gather evidence and build knowledge. The Make Connections box at the end of the Shared Read and the Comprehension passage in the Your Turn Practice Book are other places where students can generate questions and practice using the strategies they are learning. Grade 3 Teacher's Edition, Unit 1 page T217 Grade 3 Your Turn Practice Book pages 33-34 On Days 2, 3, and 4, students in grades 2 through 6 generate questions during their close reading of the selections in the Literature Anthology. They also gather evidence and build knowledge during the Stop and Checks, Access Complex Text activities, and Make Connection discussions. Using the Extended Complex Text routines found in the Teacher's Edition, students are asked to generate questions and take notes on parts of the text they find difficult to understand. Grade 3 Teacher's Edition, Unit 4 pages T25A-T25V, T225H, T364-T369 Kindergarten students and first graders read, reread, and discuss Literature Big Books, as well as Shared Reads. Kindergarten Teacher's Edition, Unit 7, pages T12-T13, T22-T26 Grade 1 Teacher's Edition, Unit 3 pages T10-T11 Kindergarten Teacher's Edition Unit 7 pages T30-T31, T48-T49 Grade 1 Teacher's Edition, Unit 3, pages T16-T17 Students in all grades use Leveled Readers, digital activities such as Interactive Texts, Activities, and eBooks, Workstation Cards, and interactive group projects to gather evidence and build their knowledge. Grade 3 Teacher's Edition, Unit 1 pages T137, 162-163, T148, T240-263
Students engage in a variety of writing tasks (narrative, informational, or arguments) and discourse to demonstrate comprehension of complex text.	Students in all grades write every day. On Days 1 and 2, students in grades 2 through 6 read, reread, and then work collaboratively with a

	partner to write about the Shared Read as part of the Comprehension Skill lesson in the Reading Writing Workshop. On Days 2, 3, and 4, they respond to the close reading of the main selection in the Literature Anthology by writing a summary of the text. Grade 3 Teacher's Edition, Unit 4, pages T16-T17, T20-T21, T225R Every week, during the Wrap Up the Week activities, students work together to research and write a report. They also analyze to share an opinion, inform, or explain what they have read during the week. With this activity, students use a model in their Your Turn Practice Books. Grade 3 Teacher's Edition, Unit 4, pages T162-T163 Grade 3 Your Turn Practice Book, page 29 On Day 4, students in Kindergarten and first grade work together on a Research and Inquiry project that relates to the week's readings. There are also writing opportunities – Extend and Independent Study - during Beyond small group lessons. Kindergarten Teacher's Edition, Unit 1 pages T52-T53 Grade 1 Teacher's Edition, Unit 3 pages pp. T44-T45 Grade 3 Teacher's Edition, Unit 1, pages T253-T255
Students use procedures such as think aloud to monitor their own understanding of text.	Beginning in kindergarten, students are taught to monitor their own understanding of text. The teacher uses think alouds to model how to use comprehension strategies throughout the Shared Read in the Reading Writing Workshop on Day 1. Here students in grades 2 through 6 are taught to monitor comprehension of complex text. The Your Turn Practice Book is another place where students can practice using the strategies they are learning to monitor their understanding of text. Grade 4, Teacher's Edition, Unit 3 pages T16-T17 Grade 4 Your Turn Practice Book pp. 3-4 Grade 3 Teacher's Edition, Unit 1 pages T225L, T225N On Days 2, 3, and 4, students in grades 2 through 6 use think alouds during their close reading of the selections in the Literature Anthology

	Grade 4, Teacher's Edition, Unit 3, pages T25A-T25P Kindergarten students and first graders use think alouds during reads of the Literature Big Books, as well as Shared Reads. Kindergarten Teacher's Edition, Unit 1, pages T22-T26 Grade 1 Teacher's Edition, Unit 3, pages T10-T11
Teachers expose younger students to complex information text by using read-aloud.	Every week, students in Kindergarten are exposed to complex information text in a few ways. Literature Big Books are used on Days 1 and 2, and then again on Day 4, to teach concepts of print, genre, the comprehension skill and strategy, and text features. Kindergarten Teacher's Edition, Unit 1 pages T22-T26 On Day 3, students hear and discuss an Interactive Read Aloud. Kindergarten Teacher's Edition, Unit 1, page T35 First graders listen to a Literature Big Book on Days 1 and 3. The teacher uses this read aloud to teach concepts of print, genre, and the comprehension skill and strategy. Then they have a listening comprehension lesson on Day 2, when they discuss the Interactive Read Aloud with the teacher. Grade 1 Teacher's Edition, Unit 3 pages. T10-T11, T31
Students engage in collaborative reading activities to build knowledge and motivation.	At the beginning of every week, students in all grades build background by talking about the Essential Question and Weekly Opener. There are Build Background videos and/or additional photographs each week to Essential Question and Weekly Opener: Grade 3 Unit 1 Week 3: p. T142-143 Every day, students in Kindergarten to grade 6 engage in Collaborative Conversations where they engage in partner, small-group, and whole-class discussions to encourage them to build knowledge and motivation. Other collaborative reading activities include responding to the Inteactive Read Alouds, making connections during the Close Read of the Shared Read, during guided practice activities during the close read of the SR

	where students are encouraged to discuss how they used the comprehension strategy during the read. They also do this for the skill, genre lesson. Grade 3 Teacher's Edition, Unit 1 pages T109, T117; T121; T127T142, T144-145, T148-151, T156-157, T159N, T159P
Teachers use a multiple-step instructional model	In all grades, the multiple-step instructional model is used during both Whole Group and Small Group instruction. In whole group lessons, the teacher uses an Explain, Model, and Guided Practice or Model, Guided Practice/Practice model to teach skills and strategies. Grade 3 Teacher's Edition, Unit 1 pages T104, T154 A similar routine is used during Small Groups. For Approaching, On Level, and English Language Learners, the teacher uses an "I Do," "We Do," "You Do" model. For Beyond Level students, the teacher uses a "Model" and "Apply" model. Grade 3 Teacher's Edition, Unit 1 pages T242, T251, T254 When students in grades 1 to 6 are doing a close reading, the teacher uses a multiple-step instructional model for teaching Think Alouds. First, the teacher models the Think Aloud. The second time it appears in the lesson, the teacher models and the student does a Think Aloud. The third time it appears, the student does the Think Aloud on his or her own. Grade 3 Teacher's Edition, Unit 1 pages T159D, T159G, T159I
Readings contain a variety of text-structures and represent various genres according to guidelines provided in the Standards.	A wide range of genres and text structures are included at all grade levels. See Contents pages of the Reading/Writing Workshop books grades K-6 and the Literature Anthology books, grades K-6. Also see all Kindergarten and Grade 1 Big Book titles, Interactive Read Aloud selections, grades K-6, Time for Kids Online articles, grades k-6, as well as the classroom library titles, 1-6.
Readings adhere to the progression of text complexity as defined in the Standards.	In *Reading Wonders*, students become independent and proficient readers of increasingly complex text by reading literature and informational texts that are at appropriate Lexile

	score and become increasingly more difficult as the school year progresses. Close reads are short, complex, and worth reading. Lexile scores for Reading/Writing Workshop selections and literature Selections are noted in the Teacher's Edition. Lexiles for Leveled Readers are noted on the back of the Leveled Readers covers. Grade 4 Teacher's Edition, Unit 1 T130-T131
Conceptual knowledge and comprehension strategies are regularly assessed in the classroom.	Each week students investigate a different topic or concept, through discussions, reading, and writing activities. Through the lesson plan, teachers model applying important comprehension strategies as appropriate to the text to find text evidence to answer text dependent question or statements about the text. The weekly, unit and benchmark assessments, ask students to apply those strategies to reread text passages to answer multiple choice and short answer questions. Frequent informal observations during guided and independent practice of students applying the conceptual knowledge and the comprehension strategies throughout the week help teachers monitor students' need for additional support. Grade 4 Teacher's Edition, Unit 1 T202-T203, T204-T205, T210-T211, T216-T217, T217A-T217R, T256-T257, T340-T341
The majority of tasks and questions are text-dependent.	The majority of questions and tasks that students are asked to respond to about texts are text dependent. At Kindergarten and Grade 1 teachers model asking text dependent questions as they read aloud the Big Books and Interactive Read Aloud Cards. At grades 1-6, the minilessons in the Reading/Writing Workshop provide explicit instruction (modeling and guided practice) in responding to text-dependent questions and tasks. Prompts provided for the Literature Anthology selections, as well as the Leveled Readers, are text-dependent. The Text Evidence questions and Make Connections prompt at the end of both the Literature Anthology selections and the Leveled Readers provide additional text dependent questions and tasks. Kindergarten Teacher's Edition, Unit 7, pages T22-T27

Assessments measure cognitive targets (e.g., locate and recall, integrate and interpret, critique and evaluate) for literary and informational texts.	Weekly and Unit Assessments include literature and informational texts. Questions provided include a mix of cognitive level tasks in both multiple choice and short and extended response formats. The answer keys for each assessment item identify the alignment to a specific common core state standard for the grade and also rates the difficulty level of the item. See the Unit and Weekly Assessments and Answer Keys, Grades K-6

Foundational Skill: Phonological Awareness

"Phonological awareness is important because it strongly supports learning how the words in our language are represented in print."

– What Every Teacher Should Know About Phonological Awareness (Torgesen & Mathes, 1998, p. 3)

What is phonological awareness?

Phonological awareness includes the ability to work with larger units in spoken language such as syllables and rhymes, which often include more than one phoneme. Children typically find it easier to work with these larger units (e.g., rhyming words) before proceeding to develop skills with individual phonemes (NICHHD, 2000, p. 2-10). Phonemic awareness is often described as part of the broader category, phonological awareness.

"Phonemic awareness is the ability to hear, identify, and manipulate the individual sounds – phonemes – in spoken words" (Armbruster, Lehr, & Osborn, 2003, p. 10). It is the foundation for reading. It is the ability to detect individual speech sounds within words. This ability is a requirement for developing accurate decoding skills and strategies (McShane, 2006, p. 13).

Why is phonological awareness important?

Strong phonological awareness is considered an early indicator of eventual success in beginning reading. Phonological awareness instruction helps children learn to read words, spell words, and comprehend text. Phonological awareness—in conjunction with phonics and fluency—is noted in the *Standards* as a "necessary and important component of an effective comprehension reading program". Solid phonological awareness is a foundational skill that facilitates independent mastery of complex text, one of the primary shifts presented in the Standards for grades K-2 (Coleman & Pimentel[1], 2011, p.1).

The National Reading Panel reached three conclusions about phonological awareness instruction in its Teaching Children to read document:

– Phonological awareness instruction has a positive overall effect on reading and spelling.
– Phonological awareness instruction leads to lasting reading improvement.
– Phonological awareness instruction can be effectively carried out by teachers.

Source: Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups (National Institute of Child Health and Human Development [NICHHD], 2000).

Additionally, the National Early Literacy Panel (2008) reports that phonological awareness was one of six precursor literacy skills (e.g., alphabet knowledge, rapid automatic naming, phonological memory, writing name, rapid automatic naming of objects or colors) that had medium to large predictive relationships with later measures of literacy development (National Institute for Literacy, 2008, p vii.)..

Who benefits from phonological awareness instruction?

- **Readers do.** Phonological awareness instruction has been shown to have a positive impact on reading skills across many student categories and grade levels. The National Reading Panel cited that phonological awareness instruction benefits: normally developing readers, children at risk for future reading problems and (later research) specifically for kindergartners at risk for developing dyslexia (Elbro & Petersen, 2004), disabled readers, preschoolers, kindergartners through sixth

graders, children across various SES levels, and children learning to read in English as well as in other languages. In a review of 97 studies on the achievement outcomes of various approaches for teaching struggling readers, "almost all successful programs have a strong emphasis on phonics" (Slavin, Lake, Davis, & Madden, 2011, p 19).

- **Spellers do**. Phonological Awareness instruction has been shown to have a positive impact on spelling skills across many student categories and grade levels. The Reading panel cited kindergartners, first graders, children at risk for future reading problems, normally developing readers, children across various SES levels, and children learning to spell in English as well as in other languages.

Components of phonological awareness

Phoneme isolation– Recognizing individual sounds in words. E.g.: What sound do you hear at the beginning of pin? (/p/)

Phoneme identification– Recognizing the common sound in different words. E.g.: What sound do you hear that is the same in sat, sun, and soup? (/s/)

Phoneme categorization– Recognizing the odd sound in a set of words. E.g.: Listen to these words–hand, heart, sun. Which word begins with a different sound? (sun)

Phoneme blending– Listening to a sequence of separately spoken sounds and then blending them naturally into a recognizable word. E.g.: What word is /b/ - /a/ - /t/? (bat)

Phoneme segmentation– Breaking a word into its sounds by tapping out or counting the sounds. E.g.: How many sounds do you hear in cat? (three)

Phoneme deletion– Recognizing the word that remains when a specific phoneme is removed. E.g.: What word do we have when we say smile without the /s/? (mile)

Common Core State Standards in English Language Arts: Standard for Phonological Awareness: Demonstrate understanding of spoken words, syllables, and sounds (phonemes).

Examples by Grade:

Kindergarten:

- Recognize and produce rhyming words
- Count, pronounce, blend, and segment syllables in spoken words

Grade 1:

- Distinguish long from short vowel sounds in spoken single-syllable words
- Isolate and pronounce initial, medial vowel, and final sounds in spoken single-syllable words

Research Recommendations

Range and scope of instruction

Grade Levels

Research summarized by the NRP suggests that Phonological Awareness (PA) instruction should be provided:

– At the kindergarten level
– At the first-grade level
– At elementary levels above first grade and as supplemental instruction for students with special needs.

The *Standards* explicitly include phonological awareness for Kindergarten and first-grade.

Instructional methods and features:
Spoken and written versus spoken only. Instruction that used letters to teach phoneme manipulation had a considerably greater impact on both reading and spelling than instruction that did not use letters but was limited to spoken sounds only.

Assessment for kindergarteners based on phoneme recognition. Findings suggest that a group-administered assessment based on phoneme recognition can serve as a useful screening tool for identifying the general level of students' PA skills in kindergarten, which in turn is a useful indicator of students who might need targeted PA skills intervention.

Guidance by initial and ongoing assessment in the first and second grades. Based on the research findings, the NRP recommended a design in which assessment results drive PA instruction at the first- and second-grade levels, both initially and through ongoing formative assessments.

– Assessments conducted before PA instruction begins should "indicate which children need the instruction and which do not, which children need to be taught rudimentary levels of PA (e.g., segmenting initial sounds in words), and which children need more advanced levels involving segmenting or blending with letters" (NICHHD, 2000, p. 2-6).

– In order to determine the length of PA instruction, "What is probably most important is to tailor training time to student learning by assessing who has and who has not acquired the skills being taught as training proceeds" (NICHHD, 2000, p. 2-42). The NRC research review argued that "intensity of instruction should be matched to children's needs" (Snow, Burns, & Griffin, 1998, p. 321).

Kindergarten
Kindergarten instruction is designed to provide practice with the sound structure of words and the recognition and production of letters. Phonological awareness tasks begin with skills such as "concept of a word," "rhyme," and "count syllables." The tasks then progress to "oral blending" (with continuous first sounds) and "oral segmentation" (with continuous first sounds–2 letter words, then 3-letter words). Finally, tasks progress to "oral manipulation" and more complex blending and segmentation with words beginning with stop sounds and longer words (4 or more phonemes).

Phonological Awareness Research Recommendations	Demonstration of Alignment in *Reading Wonders*
Sample of a Typical Kindergarten Lesson	An example of a typical week of phonological awareness lessons and the phonics lessons that directly follow them is Unit 3, Week 2, of Kindergarten. On Day 1, page T96, the teacher models the new sound /n/ using the Photo Card of a *nest*. Students then practice listening to the sound in the words of a song and in the names of objects pictured on Photo Cards. Then, on page T97, the teacher models the /n/*n* sound-letter relationship by displaying the *Nest* Sound-Spelling Card which shows the letter *Nn*. The children practice recognizing the letter *Nn* by identifying the letter in the words of the song. Students immediately produce the letter in the explicit handwriting lesson that follows on page T98. On

	Day 2, on page T110, children orally produce the sounds and blend them to say words with initial /n/*n,* and later on blend the letter-sounds to read words with /n/*n*. Explicit instruction and practice is provided throughout the week in blending the sound orally and then reading and writing words with the sound-letter.
Assessment for kindergarteners is based on phoneme recognition.	Phonological awareness and phonics skills are assessed together in Kindergarten. A new phoneme is introduced at the beginning of each week and instruction in sound-letter relationship immediately follows. At the end of the week, teachers assess these skills by using their Quick Check observations all week and the weekly Pencil and Paper Assessments for both phonological awareness and phonics in the *Your Turn Practice Book*. As an example, see page T165A of the Kindergarten Unit 3 Teacher's Edition. In this typical unit, Practice Book pages 85-86 and 88 are suggested as Pencil and Paper Assessment for /n/*n*.
First Grade *First-grade instruction is designed to provide explicit instruction and practice with sound structures that lead to phonological awareness*. Phonological awareness instruction and practice are incorporated into daily lessons.	Unit 2, Week 2—Identify and Generate Rhyme On Day 1 on page T90, the teacher models how to identify and generate rhyming words containing /u/. After modeling, the teacher guides students in whole group and small group practice (on pages T90 and T132) in identifying and producing rhyming words. Explicit instruction, practice, and review are provided in daily lessons throughout the week (on pages T100, T110, T118, and T126) in isolating and identifying the sound /u/, and orally blending sounds to form words with /u/. Manipulatives such as Response Boards and Photo Cards support the instruction each week.
Elementary Levels Beyond First Grade *At elementary levels above first grade, phonological awareness is provided as supplemental instruction for students with special needs, who may lack these skills*.	Grade 2, Unit 3, Week 2: Phonological awareness instruction for the long *i* sound is provided each day in whole group lessons, as well as in small group lessons that are appropriate for English Language Learners or students with special needs. On Day 1, on page T104, the teacher models listening for the long *i* sound in words and students then practice isolating the sound. On Day 2, on page T120, the teacher models substituting the long *a* sound for the long *i* sound in a word and students then practice the skill. On Days 3-5, on pages T132, T143, and T152, the teacher models, and students practice, blending and categorizing words with the long *i* sound. These four phonological awareness skills taught this week are then addressed in their own small group lesson for ELL students and students

	with special needs. The Tier 2 Intervention Guides provide additional support for students with special needs who may lack phonological awareness. As an example, the Tier 2 TE Phonemic Awareness Lessons 45-48 and the accompanying Practice Reproducibles pages 79, 81, 83, and 85 target medial long vowel sounds.
Phonological awareness instruction is a part of both reading and spelling.	Each week, the spelling words in Grades 1 and 2 *Reading Wonders* reflect the skills emphasized in the phonological awareness lessons. For example, in Grade 2, Unit 2, Week 1 the short *o* and long *o* sounds are the focus of the phonological awareness and phonics lessons each day, as on pages T12 and T13, Phonics Practice Activity on page T13, and the activities in the daily explicit lessons on Days 2, 4 and 5 using Word-Building Cards, on pages T29, T51, and T60, allow students to apply their knowledge of the short and long o letter-sound connection. Students read the Decodable Reader selection, At Home in Nome, in Small Group on page T69, and practice fluency when they reread the selection. On Day 1 of the daily spelling lessons, on page T14, fifteen spelling words are introduced and pre-tested. Ten of the words have the short o or long o sound. The other five words contain the previous week's phonetic element or they are previously taught high-frequency words. On Days 2-5, on pages T30, T41, T52, and T61, students sort the spelling words using the Spelling Words Cards and also build fluency in reading the words. Daily, independent practice with the spelling words are also provided in the Phonics/Spelling Reproducibles every week.
Assessment results drive phonemic awareness instruction at the first- and second-grade levels, both initially and throughout ongoing formative assessments. The assessments in Reading Wonders are designed to inform phonemic awareness instruction in Kindergarten, first- and second-grade levels. Therefore, assessment is ongoing, varied, and rigorous. Teachers use results to modify instruction.	**Informal Assessment** Throughout the TE lessons in Grades K-2, students are observed informally. Because lessons are highly interactive, and the student response rates are high, teachers have ample opportunity to check each student's daily phonemic awareness progress. Daily "Quick Check" Observations in the Teacher's Guide remind teachers what to observe. If students encounter difficulties, immediate lesson modifications are provided via the "Corrective Feedback" suggestions. **Formal Assessment** In Grades K and 1, Weekly Assessments and Unit Tests are used as ongoing formative assessments to monitor students' phonemic awareness

	acquisition. Additionally, the Daily Quick Check Observations are compiled and compared with the Quick Check Rubric to assess student skills, diagnose, and prescribe additional lessons or intervention instruction if necessary. If additional phonemic awareness instruction and/or guided practice are required, explicit lessons are provided in Small Group Instruction. In Grades K and 1, there are Weekly Pencil and Paper Assessments for phonological awareness in the *Your Turn Practice Book*.
Throughout the lessons, students are observed informally. Because lessons are highly interactive, and the student response rates are high, teachers have ample opportunity to check each student's daily phonemic progress.	A typical example in Grades K-2 is Grade 1, Unit 3, Week 1. The daily phonological awareness lessons focus on the long a sound and the phonics lessons specifically target the a-*e* spelling for the sound. On Day 1, on page T12, the teacher models how to identify the same long vowel sound in three words. In Guided Practice/Practice the teacher does the first example with students, identifying the middle sound in a set of words. Students then practice with eight other set of words which allow the teacher to observe progress. The lessons on Days 2-5, on pages T22, T32, T40, and T48, follow a similar pattern, as the teacher models how to identify, blend, add, and substitute phonemes, and students then practice with several examples. Plentiful opportunities for assessing daily progress inform appropriate small group instruction.
Sample of a Typical Kindergarten Lesson	An example of a typical week of phonological awareness lessons and the phonics lessons that directly follow them is Unit 3, Week 2, of Kindergarten. On Day 1, page T96, the teacher models the new sound /n/ using the Photo Card of a *nest*. Students then practice listening to the sound in the words of a song and in the names of objects pictured on Photo Cards. Then, on page T97, the teacher models the /n/*n* sound-letter relationship by displaying the *Nest* Sound-Spelling Card which shows the letter *Nn*. The children practice recognizing the letter *Nn* by identifying the letter in the words of the song. Students immediately produce the letter in the explicit handwriting lesson that follows on page T98. On Day 2, on page T110, children orally produce the sounds and blend them to say words with initial /n/*n,* and later on blend the letter-sounds to read words with /n/*n*. Explicit instruction and practice is provided throughout the week in blending the sound orally and then reading and writing words with the sound-letter.

Foundational Skill: Phonics and Word Recognition

"Systematic and explicit phonics instruction significantly improves children's reading comprehension."

– Put Reading First (Armbruster, Lehr, & Osborn, 2003, p. 14)

What is phonics?

Phonics instruction teaches children the relationship between letters (graphemes) and the sounds in spoken language (phonemes) and how to apply that knowledge in reading and spelling words. Phonics instruction builds on phonemic awareness. Although it includes some types of phonemic awareness activities, in which students "use grapheme-phoneme correspondences to decode or spell words," it extends beyond such tasks to "include other activities such as reading decodable text or writing stories" (NICHHD, 2000, p. 2-11).

What is systematic and explicit phonics instruction?

Research recommendations favor phonics instruction that is "systematic and explicit." An explicit approach includes specific directions to teachers for teaching letter-sound correspondences. A systematic approach is one that incorporates a planned, sequential set of phonetic elements to master. These elements are explicitly and systematically introduced in meaningful reading and writing tasks.

Systematic and explicit phonics instruction includes teaching a full spectrum of key letter-sound correspondences: not just major correspondences between consonant letters and sounds, but also short and long vowel letters and sounds, and vowel and consonant digraphs such as oi, ea, ou, sh, and th.

Several different methods have been developed to teach phonics systematically and explicitly, including synthetic phonics, analytic phonics, embedded phonics, analogy phonics, onset-rime phonics, and phonics through spelling. Broadly speaking, these approaches are all effective (NICHHD, 2000, p. 2-89).

Why is phonics instruction important?

Phonics instruction leads to an understanding of the alphabetic principle–the set of systematic and predictable relationships between written letters and spoken sounds. For children to learn how to sound out word segments and blend these parts to form recognizable words, they must know how letters correspond to sounds. Three top-level examples:

- Phonics instruction has a positive overall effect on reading. A meta-analysis by the National Reading Panel (NRP) found that systematic and explicit phonics instruction had a significantly stronger effect on children's reading than every category of nonsystematic or non-phonics instruction that was studied.
- Phonics instruction has positive overall effects on specific skill areas. The NRP meta-analysis found that across grades K-6, phonics instruction was "most effective in improving children's ability to decode regularly spelled words . . . and pseudowords," but also helped students to read miscellaneous words (some of which were irregularly spelled) and read text orally (NICHHD, 2000, pp. 2-94, 2-159).
- Phonics instruction has a lasting impact on reading. Follow-up tests in the NRP meta-analysis found that the effects of phonics instruction were reduced, but still significant, several months after the instruction ended, "indicating that the impact of phonics instruction lasted well beyond the end of training" (NICHHD, 2000, pp. 2-113, 2-159, 2-161).

Who benefits from phonics instruction?

All Students. Phonics instruction has been shown to have a statistically significant positive impact across many student categories (NICHHD, 2000, p. 2-160). For example, Kindergarteners at risk of developing future reading problems; first-graders at risk; first-grade normally achieving readers and disabled readers; and children across various SES (socioeconomic status) levels.

Grade Levels. The NRP meta-analysis Students found that Kindergarten and first-grade students experienced significantly better improvement from phonics instruction than from other types of instruction in all six areas measured (decoding regular words, decoding pseudowords, reading miscellaneous words, spelling, reading text orally, and comprehending text) with a moderate to large effect size for all areas except reading text orally (NICHHD, 2000, p 2-159). Students in grades 2-6 also experienced significantly better improvement from phonics instruction in four out of six areas (decoding regular words, decoding pseudowords, reading miscellaneous words, and reading text orally), with effect sizes for the various areas ranging from small to moderate (NICHHD, 2000, p. 2- 159).

Low-Achieving Students. A best-evidence synthesis of 97 studies investigating the effects of reading interventions for struggling readers revealed that "almost all successful programs have a strong emphasis on phonics" (Slavin, Lake, Davis, and Madden, 2011, p 19). For example, one-to-one tutoring models that focus on phonics obtain much better outcomes than programs that do not emphasize phonics (Slavin et.al., 2011).

ESL Students. One of the major findings of the National Literacy Panel's report, Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth, indicates, "Instruction that provides substantial coverage in the key components of reading—identified by the National Reading Panel (NICHD, 2000) as phonemic awareness, phonics, fluency, vocabulary, and text comprehension—has clear benefits for language-minority students (National Literacy Panel, 2006, p 3). For instance, research has demonstrated that phonics instruction enhances the reading and writing skills of children for whom English is a second language, and the positive effects remain a year later (Stuart, 1999; Stuart, 2004).

Common Core State Standards in English Language Arts
Standard for Phonics and Word Recognition: Know and apply grade-level phonics and word analysis skills in decoding words

Examples by Grade:

Kindergarten:

- Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant
- associate the long and short sounds with the common spellings (graphemes) for the five major vowels

Grade 3:

- Identify and know the meaning of the most common prefixes and derivational suffixes
- read grade-appropriate irregularly-spelled words

Research Recommendations on Phonics

Range and scope of instruction

Grade Level. The NRP finding that phonics instruction benefited students in Kindergarten, first-grade, and grades 2-6 (the majority of which were disabled readers) suggests a value to including phonics instruction at the Kindergarten and first-grade levels and beyond, but in particularly for disabled readers. *The Standards* includes phonic standards for Grades K-5.

Level at which phonics instruction begins. The NRP meta-analysis found that phonics instruction in kindergarten and first grade was "much more effective" than phonics instruction that began in second grade or later, after students have learned to read independently.

Letter knowledge as precursor. Two developmental studies, drawing on and extending a body of existing research, suggest that knowledge of letter names and/or letter sounds is an important precursor to the earliest stages of reading knowledge. Muter et al. (2004) found that students' ability to identify letter sounds and/or names on entering schooling (average age 4 years, 9 months) was one of two significant predictors, together with phoneme sensitivity, of word recognition ability a year later (pp. 671–672).

Instruction over multiple years. Results of a few multi-year studies examined by the NRP "suggest that when phonics instruction is taught to children at the outset of learning to read and continued for 2 to 3 years, the children experience significantly greater growth in reading at the end of training than children who receive phonics instruction for only one year after first grade" (NICHHD, 2000, p. 2-118).

Instructional Methods and Features

Spelling Instruction. An analysis of research commissioned by the NRC claimed that spelling instruction, lin particular at the second-grade level, is important in building "phonemic awareness and knowledge of basic letter-sound correspondences" (Snow, Burns, & Griffin, 1998, p.212).

Phonics instruction as means to an end. Based on their interpretation of the research results, the NRP argued that phonics instruction (i.e., "the teaching of letter-sound relations") should not be pursued as an end in itself, but should be directed toward the goal of helping students in their "daily reading and writing activities" (NICHHD, 2000, p. 2-96). Students should understand that this is the goal of learning letter-sounds, and should have practice in putting their skills to use.

Variable, guided by assessment. Based on their interpretation of the research results, the NRP argued that, ideally, phonics instruction should be variable based on the needs of individual students as determined through assessment (NICHHD, 2000, pp. 2-96, 2-97). Similarly, the NRC research review argued that "intensity of instruction should be matched to children's needs" in applying explicit instruction on the connection between phonemes and spellings (Snow, Burns, & Griffin, 1998, p. 321).

Phonics Research Recommendations	Demonstration of Alignment in *Reading Wonders*
Phonics instruction begins before reading is introduced.	In Kindergarten, explicit phonics instruction begins in the three-week Start Smart readiness lessons on page S8, when the teacher models recognizing the letter *Aa* on the Teaching Poster and Word-Building Cards, and the students practice letter recognition with the Big Book. Then beginning in Unit 1, Week 1, letter-sound relationships are taught, starting with /m/*m* on page T15. In Week 2, on page T110, the first vowel is introduced, /a/*a,* and the magic of reading begins when students decode the word *am* on page T111. Students learn additional letter sounds as phonics instruction continues each day throughout the year. The Reading/Writing Workshop phonics pages and

	pre-decodable stories, as well as the Practice Book pages, provide reinforcement and practice in letter-sounds and by Unit 4, on pages T30-T31, students read a decodable story chorally with the teacher, and then in small groups.
Letter names and sounds are taught to students early in Kindergarten.	Letter names are taught, beginning with the letter *Aa,* on the first day of Kindergarten in the Start Smart phonics lesson on page S8. In the Smart Start lessons which extend for the first three weeks of school, all of the letter names are taught and reinforced as students match letter cards to letters on the Teaching Poster and in the Big Book, for example on page S13. Students are exposed to a mnemonic that represent the initial sound for each letter, as well as words in a Big Book that begin with the letter-sound. Formal instruction in letter-sound relationships begins in Unit 1, with the sound-letter /m/*m* on page T15 and is reinforced and practiced in whole group, as well as retaught, practiced, and extended in small group on pages T64-T65, T71-T72, and T76. The *Animals in the Park* Big Book, Sound-Spelling Cards, Alphabet Teaching Poster, Response Boards, Letter Cards, and Letter Songs are resources used to reinforce letter-sound knowledge throughout Kindergarten.
Phonics instruction begins in Kindergarten and continues regularly for 3 years.	Explicit instruction in phonics begins with the letter identification lessons in Start Smart. In Unit 1 Week 1 instruction in letter-sound relationships begins with the continuous consonant *m,* in the daily whole-group and small group lessons. On Day 1 of a later and more typical week in Kindergarten, Unit 1, Week 3, (when enough letter-sounds have been taught to blend words) the teacher models, and students practice, connecting the new continuous sound /s/ with the letter *s* on page T179, using the Sound-Spelling Card. Students also write the letter *s*. On Day 2, on page T193, after teacher modeling, students blend with /s/s in the initial position in words, and on Day 3, on pages T201-T202, they review the letter-sound and sort pictures according to the beginning sound and letter. On Day 4, on pages T211 and T212, they practice blending, write s for words that begin with /s/s and write words the teacher dictates. On Day 5, on pages T220-T221, they review. All consonants and short and long vowel sounds are taught and practiced in Kindergarten, in both whole group and small group lessons.

	Explicit phonics instruction follows a similar pattern in Grades 1 and 2. As an example in Grade 1, the Unit 2 Week 4 phonics lessons target consonant digraphs *-th, -sh,* and *-ng*. On Day 1, on page T246, the teacher models, and students practice, connecting the sounds with the letters, and students blend the sounds to read words in the Phonics Practice Activity. On Day 2, on pages T256 and T257, the teacher first reviews the sound-letter relationships and models blending and then students practice blending and building words. On Day 3, on pages 266 and 267, the teacher models blending and the students practice blending in the Phonics Practice Activity. On Days 4 and 5, on pages T274 and T282, the teacher builds words for students to blend, and students also practice fluency. An example in grade 2 is Unit 3 Week 4 The long *e* lessons beginning on Day 1 on page T288 follow the same pattern as Grade 1, with teacher modeling and student practice in blending words with long *e*. A weekly lesson in phonics/fluency is provided in Grades 3-6 which ends with an activity to help students transition from reading one-syllable to multisyllabic words. An example of the weekly phonics/fluency lesson is Grade 4 Unit 2 Week 3, pages T154-T155.
Phonics instruction teaches students to convert letters into sounds and then to blend the sounds to form recognizable words.	The Phonics instruction follows a logical scope and sequence, beginning with the explicit teaching of letter names in the daily Start Smart readiness lessons in Kindergarten. Letter-sound relationships are introduced in Unit 1, Week 1, and are applied to simple VC and CVC words. As the sequence progresses though Kindergarten and into Grades 1 and 2, students encounter more sophisticated sound-spelling patterns and more complex words, including multi-syllabic words.. The weekly lessons in grades 3-6 help students read multi-syllabic words. <u>Example Lessons</u> Kindergarten, Unit 2, Week 2: In the Day 1 Phonics lesson on page T97 of this typical week, the teacher introduces the /t/*t* sound-letter relationship, using the Turtle Sound-Spelling Card. Students repeat the letter name and the sound it stands for, practice identifying the letter-

	sound at the beginning of words in the weekly phonics song, and write the letter. On Day 2, on pages T110-T111, the teacher reviews the sound-letter correspondence and students write the letter *t* on their Response Boards if a word the teacher says begins with /t/. The teacher models placing the letters *t, a, p* in the pocket chart and blending the sounds to read the word, and students then practice blending the word. Students apply their knowledge of /t/*t* when they read the story, on pages T112-T113, *We Like Tam!* in the Reading/Writing Workshop. On Day 3, on pages T119-T120, the teacher reviews /t/*t* and explains that the sound can also be at the end of a word. Students write the letter *t* if a word the teacher says ends with /t/ and practice blending more words with /t/*t* with the teacher. On Day 4, on pages T128 and T129, students practice blending more words, with the teacher and independently, and also write some words the teacher dictates. Then they apply their phonics knowledge as they read the story, on pages T130-T131, *I Like Sam*. On Day 5, on pages T138-T139, students read more words with /t/*t,* review the weekly phonics song, and also write words with /t/*t*. Grade 1, Unit 1, Week 3: In the Day 1 lesson of this typical week, on pages T168-T169, the teacher displays the Photo Card for *cloud* and models blending the consonants *cl* to form the beginning sounds. After teacher modeling in blending words with other *l*-blends, students practice blending in the Phonics Practice Activity. On Day 2, on pages T178-T179, *l*-blends are reviewed and children practice blending and building words with the teacher. On Day 3, on pages T188-T189, there is more modeling and practice in blending using the Phonics Practice Activity. On Days 4 and Day 5, on pages T196 and T204, the teacher builds more words for students to practice blending. Students also practice fluency in reading the words on Day 5. Grade 2, Unit 1, Week 5: Grade 2 follows the same pattern as Grade 1. On Day 1, pages T380-381, long *i* is introduced and after teacher modeling, students blend words with long and short *i*, such as *pig* and *ride,* in the Phonics Practice Activity. On Day 2, on pages T394-T395, words with long and short *i* are reviewed, blended, and built using letter cards, with more words blended or built on Days 3, 4, and 5, on pages T406, T417, and T426.

	Grade 4, Unit 3, Week 2: In the explicit lesson on pages T90-T91, the teacher explains that the spellings *gn* and *kn* contain silent letters and converts both of these spellings into the sound /n/. Additional silent letter spellings are introduced. The teacher models sounding out the word *knit,* and then guides students in identifying the silent letters in other words and pronouncing the words.
Spelling instruction is used to build phonemic awareness.	In the *Reading Wonders,* spelling instruction is designed to raise students' awareness of the sounds in words by isolating and enunciating the sounds as a natural tool in helping them spell the words. Grade 1, Unit 2, Week 5 On Day 1, on page T326, the teacher uses the Spelling Dictation Routine for the Pretest. The teacher pronounces each spelling word and then reads a sentence containing the word. Students say each word softly and stretch the sounds, which reinforces the phonemic awareness skill of segmenting. Then the child writes the word. On Day 2, on page T336, the child reads the words, listening for the consonant digraph at the beginning of each word, which builds the phonemic awareness skill of isolation. On Day 3, on page T346, students blend the sounds in the word, emphasizing the initial consonant digraph, which builds phoneme isolation, and then sort the words according to initial sounds, which builds phoneme categorization. On Day 4, on page T353, one partner reads the words while the other partner segments the word, a key phonemic awareness skill. On Day 4, as well as on Day 5 on page T361, students sort the words by initial sound. Grade 2, Unit 1, Week 3 Day 1, on page T198, student stretch the sounds in the words (as in Grade 1) which builds the skill of segmenting. On Day 2, on page T214, and on Day 3 on page T225, students sort words by initial and final sounds, which builds the skill of phoneme isolation. On Day 4, on page T236, one partner reads the words while the other partner segments the word, a key phonemic awareness skill. On Day 4, as well as on Day 5 on page T361, students sort the words by initial or final sounds. In Grade 3, Unit 4, Week 1, the Day 1 spelling lesson on page T36, on the /ü/ variant vowel, builds phoneme isolation and segmentation. The teacher extends and enunciates the /ü/ sound in

	each word and then models how to segment the word sound by sound, while attaching a spelling to each sound. Later in the week the teacher reminds students to segment a word sound by sound as they spell it.
Phonics instruction is directed toward the goal of helping students in their daily reading and writing activities.	In Grade 4, Unit 2, Week 4 the Phonics/Fluency lesson on pages T218 and T219 targets r-Controlled Vowels /är/ and /ôr/. The daily lessons will help students read the Shared Read selection in the Reading/Writing Workshop, which is read on page T208, as several words in the selection contain these vowel sounds, such as *horrible, marshes, warning, forest,* and *Florida*. These vowel sounds are also targeted in the daily Spelling lessons on pages T228 and T229. In the daily writing lessons on pages T224-T225, students will write about what an animal they choose needs to survive, and the phonics and spelling lessons this week and throughout the year will help them as they write. As an example, this week's writing could possibly contain words with the targeted phonics element, such as *harm, warm, warn, guard, target, smart, charge, dart, fortress, explore,* or *alarm*. In Grade 5, Unit 2, Week 1 the Phonics/Fluency lesson on pages T26 and T27 targets variant vowel /ô/ and diphthongs /oi/, /ou/. The daily lessons will help students read the Shared Read selection in the Reading/Writing Workshop, which is read on pages T16 and T17, as several words in the selection contain these vowel sounds, such as *crowd, Loyalists, points,* and *trouble*. These vowel sounds are also targeted in the daily Spelling lessons on pages T36 and T37. In the daily writing lessons on pages T32-T33, students will write about an historical event and why it was important, and the phonics and spelling lessons this week and throughout the year will help them as they write. As an example, this week's writing could possibly contain words with the targeted phonics element, such as *turmoil, foundation, renown, cautious, thoughtful,* and so on.
Phonics instruction is integrated with other reading instruction.	In the primary grades the Word Work lessons combine phonemic awareness, phonics and spelling (or dictation in Kindergarten). Selected spelling words in Grades 1-6 reinforce the phonics skill highlighted each week. Phonics instruction is also integrated in the other reading instruction in the weekly lesson. Grade 2, Unit 3, Week 5: The daily phonics

	lessons target long *u s*pelled *u_e, ew, ue,* and *u,* which is also the focus of the daily spelling lessons. The vocabulary lesson on Day 1, on page T385, includes the word *music,* which contains the long *u* sound. The Shared Read selection in *Reading/Writing Workshop,* which is read on pages T386-T387, contains some long *u* words. In addition, the Literature Anthology selection, "Many Ways to Enjoy Music," containing long *u* words, is read on Day 3 on pages T413A-T143B, and "A Musical Museum" is read on Day 4 on page T419B. The decodable reader story, "Luke's Tune," is read in Small Group on page T435 and reread for fluency. In addition, the targeted sound-spelling also appears in the Comprehension and Fluency passage on *Practice Book* page 143 which students reread for fluency. Grade 5, Unit 5, Week 1: The daily Word Study lessons target suffixes, which are also the focus of the daily spelling lessons. One of the suffixes taught is *–tion* and the vocabulary lesson on page T14 includes the word transition. The Shared Read selection in *Reading/Writing Workshop,* which is read on pages T16-T17, contains words with suffixes, such as *painful, hopeless,* and *truthful*. This selection is used to practice the fluency skill of expression. In addition, the Literature Anthology selection, "Ida B," is read on Day 3 on pages T25A-T25L and contains words with suffixes such as *wonderful, conversation,* and *instruction*.. Suffixes are also reinforced in the Comprehension and Fluency passage on Your Turn *Practice Book* pages 203-205 which students reread for fluency.
Phonics instruction is variable and is based on students' needs as determined through assessments.	Weekly assessments, as well as Daily Quick Check Observations in Grades K-2, are used in determining the need for differentiated phonics instruction. In grades K-2, based on results of the Weekly Assessments and observed student performance, teachers are provided Small Group options (Approaching, On-Level) to appeal to students' specific instructional needs. In Grade 1 Unit 4 Week 2, Quick Checks for the phonics skill, long *e* spelled *e, ee, ea* appear on Day 1, Page T93, Day Day 2, page T103, Day 3, page T1134, Day 4, page T119, and Day 5, page T127. There are Small Group lessons for Approaching and On-Level and the skill is assessed in the Weekly Assessment. In Grade 5 Unit 2 Week 5 The phonics skill,

	closed syllables, is taught on pages T282-T283. The teacher uses observations and informal assessments, such as the *Your Turn Practice Book* page 98, to determine students' needs for additional instruction and Small Group lessons for the Approaching Level are provided on pages T298-T299.

Foundational Skill: Fluency

"Reading fluency is indeed an important component of the reading process and it is essential that it be taught to developing readers"

–Fluency Instruction: Research Based Practices
(Rasinski, Blachowicz, & Lems, 2012, p. xi)

What is fluency?

Fluency is the ability to read text quickly, accurately, and with expression. It provides a bridge between word recognition and comprehension. "Fluency is vital to comprehension" (McShane, p. 14). Fluency includes word recognition, but extends beyond knowledge of individual words to reflect the meaningful connections among words in a phrase or sentence. Fluent readers are able to recognize words and comprehend them simultaneously.

Why is fluency instruction important?

Fluency is widely acknowledged to be a critical component of skilled reading. A study conducted by the National Assessment of Educational Progress (NAEP) found a "close relationship between fluency and reading comprehension" (NICHHD, 2000, p. 3-1, citing Pinnell et al., 1995). More generally, a National Research Council report stated that "Adequate progress in learning to read English beyond the initial level depends on . . . sufficient practice in reading to achieve fluency with different kinds of texts written for different purposes" (Snow, Burns, & Griffin, 1998, p. 223). Additional evidence of this link between fluency and the development of general reading ability, particularly reading comprehension, is provided by several studies that found student performance on fluency assessments was an effective predictor of their performance on other types of reading measures. In reviewing the research on fluency instruction, the National Reading Panel (NRP) found value in approaches that incorporated repeated oral reading, guided or unguided, as opposed to less focused attempts to encourage reading in general. Three findings:

Repeated oral reading instruction has a positive overall effect on reading. A meta-analysis by the NRP found that fluency instruction in the form of repeated oral reading (guided or unguided) "had a consistent, and positive impact on word recognition, fluency, and comprehension as measured by a variety of test instruments and at a range of grade levels" (NICHHD, 2000, p. 3-3). The weighted average of these effect sizes resulted in a moderate effect on student reading (NICHHD, 2000, p. 3-16).

Repeated oral reading instruction has a positive impact on specific skill areas. The NRP meta-analysis found that repeated oral reading had a moderate effect on reading accuracy, a somewhat less strong effect on reading fluency, and a smaller effect on reading comprehension (NICHHD, 2000, pp. 3-3, 3-18).

Who benefits from fluency instruction?

Grade Level. Analysis of grade levels covered by the studies in the NRP meta-analysis led to the conclusion that "repeated reading procedures have a clear impact" on reading ability among:

"Non-impaired readers at least through fourth grade" " (NICHHD, 2000, p. 3-17).

Low-Achieving Students. Studies in the NRP meta-analysis indicated that "Students with various kinds of reading problems throughout high school" (NICHHD, 2000, p. 3-17) benefit from fluency instruction

Common Core State Standards in English Language Arts:
Standard for Fluency

Examples by Grade:

Kindergarten:
- Read emergent-reader texts with purpose and understanding

Grade 1 – 5:
- Reading with sufficient accuracy and fluency to support comprehension

Research Recommendations for Fluency

Range and scope of Instruction:

Grade Levels. The *Standards* incorporates fluency as a foundational skill for grades K-5, with a particular emphasis on repeated oral readings for grades K-2. Instruction should capitalize on the connection between the processes of speaking and listening and the reading standards on fluency. Research has shown that individual differences in oral reading fluency growth rates during first- grade predict oral reading fluency in subsequent years. Further, students' oral reading fluency rates at the beginning of second- and third grade has been found as the predominant predictor to later reading comprehension achievement (Kim, Petscher, Schatschneider, & Foorman, (2010).

The NRP research findings suggest a value to including fluency instruction in the form of repeated oral reading procedures at least through the fourth-grade level, and possibly beyond in a supporting capacity for students with reading problems. A review of research on early childhood reading commissioned by the National Research Council (NRC) identified fluency instruction as a key component of first-grade instruction and argued that "Throughout the early grades, time, materials, and resources should be provided" for both daily independent reading and daily supported reading and rereading (Snow, Burns, & Griffin, 1998, p. 195).

Instructional methods and features
Some of the methods that produced "clear improvement"–albeit with small sample sizes within each category–(NICHHD, 2000, p. 3-15) included the following: .

Repeated readings (set number of repetitions, set amount of time, or until fluency criteria were reached) (NICHHD, 2000, p. 3)

Repeated readings "combined with other [guided] procedures such as a particular type of oral reading feedback . . . or phrasing support for the reader" (NICHHD, 2000, p. 3)

Practice of oral reading "while listening to the text being read simultaneously" (NICHHD, 2000, p. 3)

***Oral reading practice*.** In the NRP's description of effective repeated oral reading programs, the NRP stated that many of these programs provided increased oral reading practice "through the use of one-to-one instruction, tutors, audiotapes, peer guidance, or other means," compared to earlier approaches (NICHHD, 2000, p. 3-11).

***Regular assessment*.** The NRP recommended that "teachers should assess fluency regularly," using both formal and informal methods (NICHHD, 2000, p. 3-4). Such informal methods can include "reading inventories . . . miscue analysis . . . pausing indices . . . running records . . . and reading speed calculations" (NICHHD, 2000, p. 3-9, citing 5 studies). Similarly, the NRC report recommended that "Because the ability to obtain meaning from print depends so strongly on the development of reading fluency," fluency "should be regularly assessed in the classroom, permitting timely and effective instructional response" (Snow, Burns, & Griffin, 1998, p. 323).

***Validity of oral reading fluency measures*.** According to Hasbrouck and Tindal (2006), measuring student oral reading fluency in terms of words correct per minute "has been shown, in both theoretical and empirical research, to serve as an accurate and powerful indicator of overall reading competence, especially in its

correlation with comprehension. The validity and reliability of these measures has been well established in a body of research extending over the past 25 years" (citing Fuchs, Fuchs, Hosp, & Jenkins, 2001; Shinn, 1998). For example, several studies have shown that third-grade tests of oral reading fluency from the DIBELS correlated well to high-stakes reading assessments from Arizona, Colorado, Florida, North Carolina, and Oregon.

***Oral reading fluency norms*.** Based on analysis of assessment data from a pool ranging from approximately 3,500 to over 20,000 students collected between 2000 and 2005, Hasbrouck and Tindal (2006) have developed a new set of oral reading fluency norms to replace the widely used norms that were published in 1992 (Hasbrouck & Tindal, 1992). The new norms "align closely with both those published in 1992, and also closely match the widely used DIBELS norms . . . with few exceptions." These new norms cover grades 1–8 and provide information for 90th, 75th, 50th, 25th, and 10th percentile rankings.

The researchers also provided specific norm-related recommendations for using oral reading results for screening, diagnosis, and monitoring student progress:

Screening. "Fluency-based assessments have been proven to be efficient, reliable, and valid indicators of reading proficiency when used as screening measures" (citing Fuchs et al., 2001; Good, Simmons, & Kame'enui, 2001).

Diagnosis. According to the authors, oral reading fluency norms "can play a useful role in diagnosing possible problems that are primarily fluency based."

Monitoring progress. Oral reading fluency measures "have been found by many educators to be better tools for making decisions about students' progress than traditional standardized measures which can be time-consuming, expensive, are only administered infrequently, and have limited instructional utility" (citing Good et al., 2001; Tindal & Marston, 1990).

Fluency Research Recommendations	Demonstration of Alignment in *Reading Wonders*
Fluency instruction is included in the form of repeated oral reading procedures through the fourth-grade level.	In the lower grades, students read each story repeatedly with varying degrees of 'scaffold' supports such as Choral Reading with the teacher providing modeling and corrective feedback; Partner Reading and Independent Reading with the teacher circulating and listening in to provide support and feedback; or Echo-Reading with the teacher modeling pronunciation and students reading back to the teacher one sentence at a time. Students also echo-read with a partner giving the partner feedback, such as, "sound out this word." Also struggling students have an opportunity to work in small groups on reading prose and poetry orally. Grade 1 Teacher's Edition, Unit 1 pages T17, T31, T35, T48, T60 In the upper grades, students echo-read the Shared Read in the Reading/Writing Workshop. They vary the intonation of their voices to make what is

	happening in the text clearer. For the same reason, they also pause at appropriate places. The teacher models reading an excerpt of the Shared Read, then reads one sentence at a time while students echo-read each sentence. Typically, students are divided into two groups to practice intonation and pausing with the teacher providing feedback. Also struggling students have an opportunity to work in small groups on reading prose and poetry orally. Grade 3 Teacher's Edition, Unit 1 pages T28-T29, T48
In Grades K-3, materials and resources are provided for daily independent reading as well as daily supported reading and rereading.	Students read multiple short passages and stories each week in the Reading/Writing Workshop and Your Turn Practice Books. Starting in the second half of grade 1 and continues through grade 6, Your Turn Practice Books include comprehension worksheets with Partner Read activities. In addition, the Literature Anthology and Leveled Readers provide rich independent reading sources. The Reading Workstation Activity cards include a Fluency card and a Reader's Theater card, both of which provide more opportunities for daily support reading and rereading. Grade 1 Reading/Writing Workshop pages 14-23 Grade 1 Your Turn Practice Book pages 155-157 Grade 1 Literature Anthology pages 6-19 Grade 1, Unit 1, Week 1 Leveled Readers (Approaching, On, Beyond, ELL) Grade 2 Teacher's Edition, Unit 6, pages T25, T30, T40 Grade 1 Workstation Activity Cards: Reading, cards 24, 25 Grade 3 Reading/Writing Workshop pages 102-107 Grade 3 Your Turn Practice Book pages 4-5 Grade 3 Literature Anthology pages 100-119 Grade 3, Unit 2, Week 1 Leveled Readers (Approaching, On, Beyond, ELL) Grade 3 Teacher's Edition, Unit 2 pages T28-T29, T48 Grade 3 Workstation Activity Cards: Reading, cards 24, 25
Repeated readings are a part of instruction.	In the lower grades, in a whole group setting students read each story multiple times with varying degrees of scaffolded support and with the teacher providing modeling and corrective feedback. For instance, in Grade 1 Day 3, the Literature Big Book is reread with fluency being modeled.

	Grade 1 Teacher's Edition, Unit 1, pages T31, T265 In the upper grades, the teacher models the weekly Reading/Writing Workshop selection in a whole group setting; students reread the selection in groups or with partners and then practices fluency with their Your Turn Practice Book. In addition, struggling students practice fluency in small groups. Grade 4 Teacher's Edition, Unit 4, pages T27, T46 Grade 4 Your Turn Practice Book pages 53-56 For teachers with Tier 2 students a lesson on Repeated Reading Routine is provided in the Tier 2 Fluency component: Grades K/3 pages 10-11; Grades 4/6 pages 10-11.
Fluency instruction includes oral reading feedback and phrasing support.	In the lower grades, word automaticity exercises allow teachers to give feedback on students' oral reading. Teachers can also give feedback as students Partner Read in the Shared Read on Day 1 as well as when teachers do a weekly oral fluency assessment. In addition, they can monitor and provide feedback to struggling students in the I Do/We Do/You Do routine of the weekly Fluency activity in Approaching Level/Small Group section. Phrasing support can be found as part of the modeling fluency activities in the Listening Comprehension lessons. Examples: Grade 1 Teacher's Edition, Unit 1, pages T17, T35, T60, T155A; G2U6 pp. T28, T70, T118, T265, T343 In the upper grades, oral reading feedback is part of the Practice/Apply section in the formal Fluency lessons. Phrasing support is found in Fluency lessons on phrasing. Grade 3 Teacher's Edition, Unit 2, pages T29, T95, T227, T291 In the Instructional Routine Handbook, detailed fluency strategies on pp. R36-R39 provide additional instructional support for the teacher. (www.connected.mcgraw-hill.com; Teacher Resources)

Students practice oral reading while listening to the text being read simultaneously. Increased oral reading practice is provided through use of one-to-one instruction, audiotapes, tutors, and peer guidance.	Oral reading can be practiced by students while they listen to the text being read via the audio support provided on the Student Workspace for all selections found in the Reading/Writing Workshops, Literature Anthologies, Leveled Readers, and, at grades K-1, the Big Books; audio support is also provided for passages found in the Your Turn Practice Book. www.connected.mcgraw-hill.com; Teacher Resources In addition, comprehension activities found in Your Turn Practice Book provide partner read activities in which students take turns reading a passage aloud and determining their Oral Reading Fluency Rates. Grade 1 Your Turn Practice Book pages 155-157 Grade 3 Your Turn Practice Book pages 4-5 Workstation Activity Cards for Reading also provide a fluency activity card which allows students the opportunity for daily practice. Included with these cards is a Reader's Theater card for week 6 of each unit which students use to practice for their reader's theater performance. Grade 1 Workstation Activity Cards/Reading, cards 24, 25 Grade 3 Workstation Activity Cards/Reading, cards 24, 25 For more practice, fluency passages and games are available on the Student Workspace at www.connected.mcgraw-hill.com The Tier 2 Approaching Level activities in the Teacher Editions provide tutorial support for struggling students. Grade 1 Teacher's Edition, Unit 1 page T60 Grade 3 Teacher's Edition Unit 2 page T48
Students read text at the appropriate instructional level to supplement repeated oral reading.	Leveled Readers–Approaching Level, On Level, Beyond Level, and ELL Reader–highlight the weekly literature theme and genre and share the same theme, vocabulary, and comprehension skills. A database of these readers is available at www.connected.mcgraw-hill.com

	In addition to the Leveled Readers, starting at the second half of grade 1 through grade 6 leveled Partner Read activities are provided in the leveled Practice Books (i.e.,Your Turn Practice Books, Approaching Reproducibles, Beyond Reproducibles, and ELL Reproducibles) to help students orally read at their appropriate instructional level.. Grade 1 Your Turn Practice Book pages 155-157; Grade 3 Your Turn Practice Book pages 4-5 Note: the leveled reproducibles can be found on the Student Workspace at www.connected.mcgraw-hill.com
Repeated oral reading occurs in the context of the overall program and not as a stand-alone intervention.	Throughout the grades, oral reading and repeated reading is an integral part of the instructional plan. In grade 1, students reread the Literature Big Book on Day 3's Listening Comprehension to model fluency; they also reread the weekly Reading/Writing Workshop selection for comprehension in Day 2. In grade 2, a fluency lesson on Day 3 has students rereading the Shared Read. Other opportunities to reread passages occur on Day 2 (Interactive Read Alouds, Reading/Writing Workshop selection). In the upper grades, students reread the weekly Reading/Writing Workshop selection to practice a specific fluency skill for that week. Examples: Grade 1 Teacher's Edition, Unit 1 pages T26-T27, T31 Grade 2 Teacher's Edition, Unit 6 pages T25, T30, T40 Grade 3 Teacher's Edition, Unit 1, page T28
Fluency is assessed regularly using formal and informal methods.	Formal Methods: One group of students per week is assessed using the timed oral reading fluency passages from the Fluency Assessment component. Approaching Level, On Level, and Beyond Level passages are featured for each Unit in Grades 2–6 (and Units 3–6 in Grade 1) to aid in monitoring student progress and verifying grouping decisions and assignments. Each student passage is accompanied by a teacher recording sheet that allows for tracking errors, registering number of words read, formulating the Words Correct per Minute (WCPM), and noting a student's Accuracy Rate percentage. Informal Methods: Students are regularly assessed in the classroom through informal reading inventories, miscue analyses, pausing indices,

	running records, and reading speed calculations. Leveled Practice Reproducibles are also used for fluency assessment. For example, in first grade, a fluency assessment strategy in an Approaching Level activity is for the teacher to read a passage from the Approaching Reproducibles with the students repeating each sentence after the teacher using the same intonation and phrasing (see Grade 1 Teacher's Edition, Unit 1 page.T48). Students also practice fluency assessment with partners using the Fluency Workstation Cards.
Students' oral reading fluency is assessed in terms of words correct per minute.	The Fluency Assessment component for Grades 1–6 features oral reading fluency passages (informational and literature)–not words from a list– to assess students' ability to read unfamiliar text with speed and accuracy as well as with prosody. Students read a passage aloud for one minute while their errors and total number of words are tracked. The recording sheet that comes with each passage features scoring tables that allow for ready tabulations of WCPM and the Accuracy Rate percentage. The 50th percentile WCPM for Fall, Winter, and Spring are featured on the recording sheet too. This allows for a quick comparison of student results with the benchmarks identified by Hasbrouck & Tindal in their work on oral reading fluency norms. One group of students is assessed each week. Approaching Level students are tested weeks 1, 3, and 5; On Level students are tested weeks 2 and 4; and Beyond Level students are tested in week 6. A fluency goal is noted for each week. For students who fall short of this goal—slightly or significantly—remediation is identified, such as lessons from the Tier 2 Intervention Fluency Teacher's Edition.

Writing

"Writing is essential to communication, learning, and citizenship. It is the currency of the new workplace and global economy. Writing helps us convey ideas, solve problems, and understand our changing world. Writing is a bridge to the future".

(National Writing Project, http://www.nwp.org/cs/public/print/doc/about.csp)

What are the processes involved in writing?

At the most basic level, writing by definition is the translation of thought into visual form; however, the process of writing is remarkably complex. The act of writing is rarely linear and requires the iteration of planning, drafting, and revising while simultaneously employing critical thinking skills to analyze, summarize, and evaluate. Writing is a language-based activity that naturally overlaps with other processes included elsewhere in the *Standards*, such as reading, expressive language, receptive language, vocabulary use, and writing mechanics.

What is instruction in writing?

Graham & Perin (2007) in their meta-analysis of research on writing instruction identified 11 key elements for writing instruction:

1. Writing strategies, including planning revising, and editing;
2. Summarization, which includes explicit and systematic teaching
3. Collaborative writing, where students work together to plan, draft, revise, and edit
4. Specific product goals
5. Word processing, using computers and word processors as supports
6. Sentence combining, where students are taught to construct complex sentences
7. Prewriting, which assists students in generating and organizing ideas
8. Inquiry activities, where students analyze concrete data to help develop ideas and content
9. Process writing approach, which utilizes a workshop environment stressing extended writing opportunities, authentic writing, personalized instruction, and cycles
10. Study of models, which allows student to read, analyze, and emulate good writing
11. Writing for content learning, which uses writing as a tool for learning content mateiral. (p. 4 – 5).

With the increased emphasis on technology, students are now called upon to move beyond traditional print media to include digital representations. As within the *Language* strand in the *Standards*, writing instruction includes activities that require students to employ a variety of technological tools to represent their work.

Why is instruction important?

Writing is a central form of communication. It requires a deep knowledge of subject matter and employs critical thinking skills. As students transition to high school and college, writing becomes one of the primary methods by which their work is judged.

When students increase their knowledge about writing processes, they become better writers. It has been demonstrated that students' knowledge of discourse writing—that is, knowledge about various genres of and schemas for writing, coupled with linguistic knowledge (e.g., grammar, procedures for constructing sentences, spelling)—are factors that uniquely contribute to student variation in writing performance. Olinghouse and Graham (2009) found the following five types of discourse knowledge significantly contribute to story writing quality, length, and vocabulary diversity:

- Substantive processes (role of process in good writing and carrying out the writing process;

- Production procedures (role of linguistic and mechanical factors in good writing, story writing, and carrying out the writing process);
- Motivation (role of effort in good writing and carrying out the writing process);
- Story elements (basic structural elements in a story);
- Irrelevant information (p 47).

Writing practices enhance students' reading achievement. In their meta-analysis examining the effects of various writing practices on reading performance, Graham and Herbert (2010) found that when students write about text, are explicitly taught writing skills and processes, and increase the amount of time spent writing, students demonstrate greater text comprehension.

Common Core State Standards in English Language Arts
Standard for Writing: Students write logical arguments based on substantive claims, sound reasoning, and relevant evidence. Students engage in short and long-term research projects and produce a written analysis and presentation of findings.

Examples by Grade:

Grade 1:
- Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.
- With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.
- Participate in shared research and writing projects

Grade 5:
- Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- With some guidance and support from adults, use technology, including the internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.
- Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

Who benefits from instruction?

All Students. In Writing Next, the majority of research articles reviewed in Graham & Perin's (2007) meta-analysis included students across the full range of normal classroom variation. The 11 key elements of writing instruction were found to benefit a wide variety of learners.

Less skilled writers. Students who struggle with foundational writing skills, for example ESL students or students with a disability, may benefit from direct, targeted instruction. For example, a study conducted by Saddler & Graham (2005) indicated that when provided with direct instruction designed to foster sentence-combining skills, fourth-grade students who were considered less skilled in writing improved their story writing and revising skills. Graham & Perin's (2007) meta-analysis indicated that writing strategy instruction was found particularly effective for low-achieving students.

Research Recommendations for Writing

Range and scope of instruction

Grade Level. Young children are naturally inclined to express ideas in print, primarily through illustration. Writing instruction typically begins informally in preschool, as children begin to master basic concepts of print and letter formation, and becomes more sophisticated as children move into Kindergarten and beyond.

Pearson (1994) indicates that the "synergistic" relationship between reading and writing renders it critical to begin writing instruction in the early grades.

The *Standards* address writing for all grade levels, beginning in Kindergarten. Children in the lower elementary grades create opinion pieces, narratives, and informative/explanatory texts. They develop rudimentary skills in collaboration and publishing, and begin to utilize revising and editing processes to strengthen their writing. As children advance through the higher elementary grades, students are required to compose increasingly sophisticated texts that incorporate evidence and research to explain and support particular points. Students further refine and develop previously learned skills.

Instructional Methods and Features:

Graham & Harris (1994) advocate for an integrated approach by incorporating elements from direct skill instruction and the process-oriented methodology, including:

- Skill-oriented instruction designed to foster text production skills (e.g., spelling, phonemic awareness)
- Opportunities for children to engage in writing activities
- Frequent opportunities to apply specific skills in a variety of writing activities
- Peer review and collaboration

Graham & Perin (2007) in their meta-analysis of research on writing, identified 11 key elements for writing instruction:

1. Writing strategies, including planning revising, and editing;
2. Summarization, which includes explicit and systematic teaching
3. Collaborative writing, where students work together to plan, draft, revise, and edit
4. Specific product goals
5. Word processing, using computers and word processors as supports
6. Sentence combining, where students are taught to construct complex sentences
7. Prewriting, which assists students in generating and organizing ideas
8. Inquiry activities, where students analyze concrete data to help develop ideas and content
9. Process writing approach, which utilizes a workshop environment stressing extended writing opportunities, authentic writing, personalized instruction, and cycles
10. Study of models, which allows student to read, analyze, and emulate good writing
11. Writing for content learning, which uses writing as a tool for learning content material. (p. 4 – 5).

Writing practices demonstrated to increase students' reading comprehension skills, include the following:

- **Have students write about texts they read**. Write personal reactions, analyze and interpret text, write summaries keep notes, and answer and create questions about text;
- **Teach students the writing skills and processes that create text**. Teach the process of writing, text structures for writing, paragraph, sentence construction, and spelling;
- **Increase the frequency allocated for writing** (Graham & Herbert, 2010, p 11).

Writing Research Recommendations	Demonstration of Alignment in *Reading Wonders*
Students engage in writing activities to demonstrate understanding of text.	From Kindergarten through Grade 6, students engage in meaningful writing activities to demonstrate understanding of texts.

	In Kindergarten, weekly shared and interactive writing opportunities on Day 1 and Day 2 of the instructional plan allow teachers to model writing. Working together, the class writes about the weekly topic and essential question, using what they have learned from the texts read aloud. On Days 3-5, students are asked to write independently after discussing student models. In Grade 1, in addition to shared and interactive writing lessons each week, students write in response to the Interactive Read Aloud selection, using evidence from the text to demonstrate understanding. Through the comprehension minilesson on Day 2 of the instructional plan, teachers model how to reread the Shared Read in the Reading/Writing Workshop for a specific purpose, aligned with grade 1 CCSS reading standards. Students write to fill in a graphic organizer, using evidence from the text. As they read the weekly selection from the Literature anthology on Days 3 and 4, students are asked to take notes in a graphic organizer. This writing opportunity has students apply what was modeled in the minilesson from Day 2. The Respond to Reading at the end of each Literature Anthology selection provides text –dependent questions for students to answer. Students can respond in class or partner discussions or students can respond in writing to one or more of the questions. Instruction is provided to teach students how to go back into the text to find evidence to support their responses. On Day 5, the Research and Inquiry projects asks students to use information they have learned from the texts as sources for research writing. The Write About Reading activity begins to prepare students to write analytically about texts they have read. Students write to defend an opinion or statement about the texts, focused on specific grade 1 CCSS reading standards. Students are taught how to cite evidence from texts to support their responses. The Write About Reading Your Turn Practice Book pages offer additional scaffolded support for writing about texts. In grades 2 through 6, students are taught to take notes while the read, including using graphic organizers that demonstrate understanding of specific CCSS reading standard, as it applies to the Shared Read in the Reading/Writing Workshop, the selection from the Literature Anthology, and the leveled readers. Explicit instruction on writing about reading is provided each week in the

	comprehension minilessons. These lessons provide direct instruction, modeling, and guided practice for writing about reading. The writing activity is based on rereading the Shared Read in the Reading/Writing Workshop focused on a specific grade level CCSS reading standard. After modeling finding text evidence to support answers to questions or statements about a text, teachers model how to use the text evidence to write about the reading. The writing activities include writing a summary, paraphrase and character description. After the modeling, students then work through a guided practice activity, again, citing text evidence to support their writing. Each week, after reading the Literature Anthology, students apply what they have learned about Writing about Reading. Students are asked to cite evidence from the text. Write about Reading activities are also provided for all the Leveled Readers so students can apply what they have learned to the differentiated texts. At the end of each week, another Write About Reading activity asks students to write analytically about all the various texts that they have read throughout the week. Students write about opinions or informative/explanatory writing in response to the texts. Students learn to support their ideas and reasons by citing explicit evidence from the texts. The Write About Reading activity in the Your Turn Practice Book pages offers scaffold support and modeling. Additionally, throughout each week of instruction, students are asked to discuss and answer the essential questions with evidence from each text read. These activities can be completed as a class, small group, or partner discussion or they can be assigned as a partner or individual writing activity. Kindergarten Teacher's Edition, Unit 3 pages T18-T19, T32-T33, T40-T41, T50-T51 Grade 1 Teacher's Edition, Unit 2 pages T21, T27, T35B, T35E, T35K-T35L, T45, 44, T47, T62 Grade 4 Teacher's Edition, Unit 6, pages T148, T153T, T153V, T153W, T157, T158-T159, T160-T161 Grade 5 Teacher's Edition, Unit 2, pages T148-149, T153N, T156-T157, T158-161
Ample time is allocated for writing activities.	As noted in the explanation and examples cited above, each instructional week is filled with writing activities related to texts read at each grade. Additional writing activities are provided within

	the language arts block of instruction. Students are engaged in writing activities each day. Instruction, modeling, and guided practice provides the support students need to develop into proficient writers. At Grades 2-6, students analyze an expert model and student model of writing. They write and revise shorter pieces of writing throughout the week, reflecting on the how their revisions improved their writing. One to two longer pieces of writing is developed in each unit, allowing for 2-3 weeks for students to develop their writing through each stage of the writing process. Minilessons and writing models, as well as rubrics and anchor papers provide the support necessary to develop students writing proficiency. See citations above. In addition: For all Grades K-6, the Leveled Workstation Activity cards include writing activities that support the instruction of each week. Through these activities, students are spending small group independent time developing writing proficiency. Grade 2 Teacher's Edition, Unit 1, pages T22-T23, T36-T37, T48-T49, T62-T63, T480-T491 Grade 3, Teacher's Edition, Unit 2, pages T32-T33, T98-T99, T164-T165 Grades K-6: Workstation Leveled Activity Cards, Writing
Writing curricula includes skill-oriented instruction to enhance text production skills.	The Reading/Writing Workshop includes targeted writing skills –oriented instruction. Beginning at Kindergarten and Grade 1, student writing samples serve as models to teach specific writing traits and skills, including Organization: sequence, Word Choice: descriptive words, and Ideas: adding facts or details. Additional student models focus on the use of proper Standard English grammar usage. In Grades 2-6, more in depth instruction is provided in the Reading/Writing Workshop. Students analyze an expert model, focusing on a specific trait/skill. Students work with partners to discuss how the trait/skill is presented in the writing. Next students analyze a student model revision. Partners evaluate how the trait/skill was revised, how it improves the effectiveness of the writing model, and also propose additional revisions focused on the specific trait/ skill. Grammar and Usage revisions are also included in the model to emphasize for students how knowledge of the conventions of Standard English improves the effectiveness of writing. The

	Grammar Handbook at the back of the Reading/Writing Workshop is referenced through the writing instruction and is used by students during independent writing. Kindergarten Reading/Writing Workshop, Unit 7 pages 44, 45; Unit 10 pages 44, 45 Kindergarten Teacher Edition, Unit 4 pages T18, T58, T122 Grade 5 Reading/Writing Workshop pages 246-247, 318-319, 448-480
Students use specific criteria to evaluate the quality of writing.	At Kindergarten and Grade 1, Writing checklists are shared with students as they revise and evaluate their writing. At grades 2-6 writing rubrics are provided for Write about Reading activities. In addition, writing rubrics and anchor papers for narratives, informational, explanatory and opinion writing are used in the writing process lessons. Students review the rubrics and anchor papers as they revise their writing and to evaluate their writing. Generic rubrics are also provided. Teachers can work with students to create their own rubrics. Grade 2 Teacher's Edition, Unit 1, T480-T491 Grade 5 Teacher's Edition, Unit 5, T343-T361 Kindergarten-Grade 1 www.connected.mcgraw-hill.com; see Teacher Resources Grades 2-6 www.connected.mcgraw-hill.com; see Teacher Resources and Writer's Workspace
Students engage in collaborative learning experiences, such as peer review.	The power of collaborative learning is a cornerstone of the instructional plan of Reading Wonders in all grades throughout all parts of the instruction, including writing. The Collaborate logo throughout the student and teacher materials signals opportunities for collaborative discussions and learning. At Kindergarten and Grade 1 the shared and interactive writing lessons ask students to work together as a class to write, revise and evaluate their class writing. As they move to work on their independent writing, they work with peers to brainstorm ideas, give feedback on drafts and revisions and help evaluate writing after presentations. At Grades 2-6, opportunities for student collaboration in writing continues. Students begin analyzing expert and student writing models. Each week they write and revise shorter pieces of writing, meeting with peers to discuss revisions

	and how the revisions improved the writing. During the process lessons, students work in pairs after each step in the writing process. Peer conferencing checklists and speaking and listening checklists support the collaborative learning. Grade K Teacher's Edition, Unit 3, pages T18-T19, T32-T33, T40-T41, T50-T51 Grade 1 Teacher's Edition, Unit 4, pages T18-T19, T28-T29, T36-T37, T42-T43 Grade 2 Teacher's Edition, Unit 1, pages T22-T23, T36-T37, t48-T49, T54-T55 Grade 6 Teacher's Edition, Unit 2, pages T 30-T31, T32-T33, T34-T35, T344-T356
Lessons require students to compose a variety of text, including narratives, opinion pieces, and informative/exploratory texts, as indicated in the Standards	*Reading Wonders* provides in depth instruction, practice and application opportunities to compose a variety of text including narratives--real and imagined, opinion writing, and informative/explanatory writing. In Kindergarten and Grade 1, the shared, interactive and independent writing activities throughout the weeks focus on one of the required genres. At Grades 2-6, the various Write About Reading activities within each week ask students to write opinion, informative or explanatory writing. Each week, the writing trait and skill is taught and practiced in the context of one of these genres of writing, providing students the opportunity to write frequently within the week focused on a particular type of text. Additionally, the writing process genre lessons in each unit ask students to write longer pieces of writing in all the genres. Grade 1 Teacher's Edition Unit 1, pages T47, T125, T203, T281 Grade 2 Teacher's Edition Unit 6, pages T32, T34, T36, T452, T480-T491 Grade 4 Teacher's Edition Unit 1, pages T20, T25R, T30-T31, T344-T355
Students explore the variety of digital tools to produce and publish writing.	The Writer's Workspace in *Reading Wonders* Connect Ed provides a digital pathway for students to produce and publish their writing. Writer's Workspace takes students through each step of the writing process in a digital environment. Instruction, models, rubrics, checklists, grammar and usage references and other important writing support are included to assist students at each stage of the writing process. The writing process genre lessons and research

	activities encourage students to use various media to publish and present their work. Students learn how audio and visual displays enhance the publication and presentation of their writing. Digital assets accessible within the Student Center of *Reading Wonders* Connect Ed, including image and audio files can be used to publish and present various types of writing. Using the Reading/Writing Workshop, Literature Anthology, and Leveled Reader e Book writing tool, students can write their responses to text-dependent questions and other response to reading online and submit responses for teacher review. The My Binder tool in the student workspace allows students to create, revise, and submit their writing and research assignments as a digital submission to the teacher. Grades 1-6 www.connected.mcgraw-hill.com; Student Workspace-Read Grades K-6 www.connected.mcgraw-hill.com; Student Workspace-Write
Students participate in shared research and writing projects.	In Reading Wonders, students in Kindergarten through Grade 6 participate in shared research and writing projects throughout the year. Each week students work with partners or small groups to complete short research projects to explore and learn more about the topic or concept they are studying. Research Roadmaps provide guided support as they work their way through the steps of the research process. In Grades 1-6, students choose one of the short projects and conduct extended research on the topic. Working collaboratively, students learn how to assign roles, evaluate reliable print and media resources, cite evidence from sources, and organize and synthesize information in writing. Grade 1 Teacher's Edition Unit 2, pages T124-T125, T280-T281 Grade 4 Teacher's Edition Unit 1, pages T28-T29, T220-T221 Grades K-6: www.connected.mgraw-hill.com see the Collaborate section on the Teacher Workspace for research assignments online.

Speaking and Listening

"…children's understanding of the meaning of words and concepts and of other aspects of language such as sentence structure and listening comprehension, which they learn through their language interactions, are key foundational skills for later reading achievement"

(National Institute for Literacy, p. 1, para.1)

What are the processes involved in speaking and listening?

Oral language includes critical skills that allow children to:

- Communicate-listen and respond when people are talking
- Understand the meaning of a large number of words and concepts that they hear or read
- Obtain new information about things they want to learn about, and
- Express their own ideas and thoughts using specific language (National Institute for Literacy)

Oral language is divided into two subtypes: receptive language and expressive language. Receptive language is language that is heard and understood. Children exhibit receptive language skills when they listen and comprehend stories, understand vocabulary, engage in social exchanges with peers, and follow directions. Expressive language is the generation of thoughts, ideas, and needs through verbal and visual form. Children exhibit expressive language skills when they retell a story, incorporate vocabulary, and engage in discussion. Woven into these processes are other linguistic features and cognitive abilities, such as vocabulary, grammar, auditory memory, sequencing, and phonological processing, among others. Receptive language skills develop earlier than expressive language skills.

What is instruction in speaking and listening?

Instruction in speaking and listening focus on the following skills and processes:

- Understanding of information by answering questions about key details or facts
- Engaging in collaborative discussions
- Representing ideas and thoughts in oral and written form, as well as through media
- Reporting on topics and relating stories that contain key details and are presented in a logical fashion
- Speaking in complete sentences and utilizing developmentally appropriate vocabulary
- Differentiating contexts that require formal English from contexts where informal exchange is acceptable
- Interpreting and use images, graphics and symbols, as found in media
- Demonstrating understanding by rephrasing, summarizing

Why is instruction important?

There exists a complex interplay between speaking and listening skills and academic achievement. Speaking and listening are language-based processes that are prerequisites for reading and writing. Studies have shown that:

- Oral language skills, in conjunction with spelling and letter-writing fluency, are positively related to writing skills (Young-Suk, Otaiba, Puranik, & Folson, 2011) and reading skills (Cooper, Roth, Speece, & Schatschneider 2002).

- Expressive vocabulary knowledge and listening comprehension skills are related to word identification ability (Wise, Sevcik, Morris, Lovett, & Wolf, 2007, p. 1095).
- Receptive and expressive vocabulary knowledge are related to pre-reading skills (Wise, et.al, 2007)
- Expressive vocabulary and listening comprehension are related to word identification skills (Wise, et.al., 2007)

Common Core State Standards in English Language Arts Standard for Speaking and Listening: Students gain, evaluate, and present increasingly complex information, ideas, and evidence through listening and speaking as well as through media.

Examples by Grade

Kindergarten

- Participate in collaborative conversations with diverse partners about Kindergarten topics and texts with peers and adults in small and large groups
- Describe familiar people, places, things, and events, and with prompting and support, provide additional detail.
- Add drawings or other visual display to descriptions as desired to provide additional detail.

Grade 5

- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expression their own clearly.
- Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas of themes; speak clearly at an understandable pace.

Who benefits from instruction?

Kindergarten Students. Teachers are well aware that students embark upon their educational careers with varying degrees of development in their receptive and expressive language skills. Instruction at the Kindergarten and early elementary level includes engaging in shared discussions, learning to collaborate with peers, demonstrate understanding by answering and asking questions, turn-taking, and using rich, detailed description and new vocabulary.

Struggling Readers. A study of second- and third-grade students identified with a reading disability concluded that receptive and expressive vocabulary knowledge were related to pre-reading skills, and listening comprehension skills were found to facilitate word identification (Wise et.al., 2007). Engaging in activities designed to foster vocabulary and listening comprehension may benefit students who struggle in reading.

ELL Students. August and Shanahan (2006) state that "instruction in the key components of reading is necessary—but not sufficient—for teaching language-minority students to read and write proficiently in English" (p. 4) and that, "literacy programs that provide support in oral language development in English, aligned with high-quality literacy instruction are the most successful" (p. 4). Research conducted by Miller, Heilmann,, Nockerts, Iglesias, Fabiano, and Francis (2006) indicate that better oral language skills facilitate passage comprehension and word reading, in both Spanish and English. Further, higher English oral language skills are associated with higher Spanish reading scores, and higher Spanish oral language skills are associated with higher English reading scores, indicating a 'cross-language' effect. August and Shanahan (2006) note that:

well-developed oral proficiency in English is associated with English reading comprehension and writing skills for these students. Specifically, English vocabulary knowledge, listening comprehension, syntactic skills, and the ability to handle metalinguistic aspects, such as providing definitions or words, are linked to English reading and writing proficiency (p 4).

Research Recommendations for Speaking and Listening

Range and scope of instruction

Grade Level. The *Standards* address speaking and listening skills from Kindergarten and above. Two areas of focus, *Comprehension and Collaboration*, and *Presentation of Knowledge and Ideas* are listed. Students engage in grade-appropriate collaborative conversations with peers and follow rules of discussions. Students express their thoughts and ideas in verbal and visual form, and add rich detail and relevant facts.

Speaking and Listening Research Recommendations	Demonstration of Alignment in *Reading Wonders*
Students develop and refine speaking and listening skills by participating in collaborative learning activities.	*Reading Wonders* provides opportunities for students in all grades to engage in partner, small group, and whole class discussions. Each week of the program is organized around a weekly concept. In the Reading/Writing Workshop, students discuss the concept as a class, sharing information and answering an Essential Question related to the concept. In grade 2, unit 5, week 3, page 358, students discuss the concept of heroes and answer the Essential Question: What do heroes do? In grade 6 unit 1, week 3, page 46, students discuss the concept of environments and answer the Essential Question: How do life forms vary in different environments? The Talk About It feature supports the essential question and extends the discussion, providing students with an opportunity for collaborative conversations in pairs or groups. Instruction to help students successfully manage collaborative conversations, as both speakers and listeners, is provided in the Teacher's Edition lessons Introduce the Concept and Start Smart. The Instructional Routines Handbook provides teaching strategies for conducting Collaborative Conversations in the classroom. The Professional Development Videos also model Collaborative Conversations taking place in the classroom. In grades 2-6, the Reading/Writing Workshop instructional lessons: Vocabulary, Comprehension Strategy, Comprehension Skill, Genre, Vocabulary Strategy and Readers to Writers each include a

	Your Turn activity in which students, working in pairs, engage in additional close reading and discussion of the text. In grade 1, the Words to Know, Phonics/Fluency, Comprehension Skill, and Writing and Grammar lessons also include a Your Turn partner activity. In the Literature Anthology, the Make Connections questions that appear at the end of each selection provide opportunities for students to discuss the text with partners, using text evidence to support their responses. Grade 2 Teacher's Edition, Unit 1, pages S5, S29 Grade 1 Teacher's Edition, Unit 5, page T191L Grade 6 Teacher's Edition: Unit 4, page T89N www.connected.mcgraw-hill.com; see the Teacher's Resources for Instructional Routines Handbook PDFs and Professional Development
Students demonstrate the ability to orally present ideas in a logical, thoughtful manner.	In the Teacher's Edition, the Research and Inquiry activities that wrap up each week provide students with opportunities to practice and demonstrate presentation skills. During Research and Inquiry, students work with a partner or in small groups to complete a project and orally present their findings to the class. In the Research and Inquiry project for grade 1, unit 3, week 5, pages T356-T357, students work with a partner to create a flowchart that shows where food comes from. Partners choose a food to research, find out how that food is produced, and create a flowchart—including illustrations and text— to explain the steps in the process. Students then share their flowcharts with the class. In grade 4, unit 2, week 5, page T284, students research an animal that can be found living in their state, gather visuals to support their research, and present the information to the class. As part of the presentation process, students use the online Presentation Checklist to evaluate their roles in the presentation. Oral presentation skills are also reinforced in the Unit Research project. For this activity, students are divided into five groups; each group selects a project relating to one of the Essential Questions from the unit. Groups complete their research, organize the information, and take turns presenting their projects to the class.

	Evaluation checklists are available both for students, to help them assess their research and presentation skills, and for teachers, providing guidelines and rubrics. In grades 1-6, writing instruction in the Teacher's Edition provides students with multiple opportunities to orally present their ideas. As part of the Weekly Writing lessons, students select a piece of their own writing to share with peers. In grades 2-6 Unit Writing, students present drafts of their writing pieces for peer review and response. In each unit of the Teacher's Edition, the Celebrate Your Writing lesson, invites students to select, prepare, and orally present a piece of writing they have worked on throughout the unit. Grade 4 Teacher's Edition, Unit 2 page T331. Grade 5 Teacher's Edition, Unit 3 pages T32-T33. T346-T347, T352-T353, T334-T335.
Students contribute their own ideas and incorporate the ideas of others when engaging in collaborative discussions.	The Small Group Differentiated Instruction in the Teacher's Edition includes Literature Circles; activities for students at all reading levels—Approaching, On-level, Beyond, and English Language Learners—to engage in collaborative conversations, sharing and exchanging ideas. In grades 2-6, students have the opportunity to guide the discussions, using the Thinkmark questions in the Leveled Reader appropriate to their group. In grade 1, the discussions are teacher-led. The Workstation Activity Cards also provide opportunities for collaborative discussions. Each of the four types of cards: Reading, Writing, Phonics/Word Study, and Science/Social Studies, includes activities that students can complete by working with a partner. Additional collaborative opportunities in the Teacher's Edition include the Text Connections activities. Students work in groups to compare and analyze the Reading/Writing Workshop and Leveled Reader texts they read throughout the week and orally present their ideas and findings to the class, encouraging further discussion. Grade 6 Teacher's Edition, Unit 2 pages T29, T41, T49, T53,T59

Students acquire an understanding of diversity through interpersonal communications and interactions.	The Make Connections questions in the Reading/Writing Workshop and Literature Anthology provide students with opportunities to discuss how the weekly texts they have read relate to their own lives, as well as to the world around them. By sharing information and ideas, students gain a greater understanding and appreciation of diversity. Grade 3 Reading/Writing Workshop pages 48, 123. Grade 5 Literature Anthology page 315.
Students incorporate a variety of media elements when presenting information.	Across grades 1-6, the Research and Inquiry projects in the Teacher's Edition provide opportunities for students to incorporate a variety of media elements as part of their presentations. In grade 3, unit 4, week 5, page T284, pairs of students work together to create a poem and accompanying audio recording about people who have inspired them. In grade 5, unit 5, week 3, page T156, students have the option of creating a website entry or podcast that describes a nature reserve or a wildlife sanctuary they have researched. As part of the Unit Writing instruction in the Teacher's Edition, students select either a print or digital format to use when publishing their final writing products. For example, grade 3 students can choose to present their unit 5, week 6 opinion essay as an art mobile, on a debate wall, as a social networking page, or as a slide show.
Teachers use a variety of instruction methods, such as read-aloud, to assist students in acquiring a rich and varied vocabulary.	In grades K-2, the Interactive Read Aloud cards help students acquire a rich and varied vocabulary through oral exposure to a variety of literature and nonfiction selections. The five oral vocabulary words introduced each week are highlighted and used in the context of the selection. Instructional routines for oral vocabulary and retelling are included for support. In grades 2-6, the Vocabulary Strategy lessons in the Reading/Writing Workshop provide instruction to help students acquire a rich and varied vocabulary. Among the lessons featured are those that deal with synonyms, antonyms, homographs, homophones, figurative language, prefixes, suffixes, and morphology.

	In grades 3-6, the Build Vocabulary lessons in the Teacher's Edition include a variety of collaborative activities that extend the instruction. The activities in grade 6, unit 2, week 3, page T166-T167, for example, can be used to reinforce academic vocabulary, root words, connotation and denotation, shades of meaning, and morphology. Additional opportunities for vocabulary enrichment are provided in the Access Complex Text Vocabulary feature in the Teacher's Edition. This feature provides students with instruction on domain- specific vocabulary words from the week's readings that may be unfamiliar. Grade 1 Teacher's Edition, Unit 3 page T21 Grade 4 Reading/Writing Workshop page 201 Grade 3 Teacher's Edition, Unit pages T38-T39. Grade 5 Teacher's Edition, Unit 5 pages T217E, T217K.

Vocabulary Acquisition and Use

"Of the many compelling reasons for providing students with instruction to build vocabulary, none is more important than the contribution of vocabulary knowledge to reading comprehension"

– Baumann, Kame'enui, & Ash, 2003.

What is vocabulary?

Vocabulary is knowledge of the meaning, use, and pronunciation of individual words. It includes both oral vocabulary–words we use in speaking or recognize in listening–and reading vocabulary–words we use or recognize in print. Vocabulary is a key component of comprehension. Before readers can understand the meaning of spoken or written text, they must know what most of the words mean.

The *Standards* conceptualize vocabulary in two ways. First, the Standards emphasize the need for students to expand the breadth of their vocabulary knowledge; that is, to acquire a healthy stock of words. Second, the *Standards* indicate that students be able to not only interpret the meaning and tone of words in context, but also to use words appropriately. Vocabulary is an important component of many aspects of literacy, including listening comprehension, oral expression, reading comprehension, and written expression.

Why is vocabulary instruction important?

Much of our vocabulary knowledge comes from simple exposure to new words in context. However, research has verified that direct instruction in vocabulary–specifically teaching the meaning of new words, and teaching strategies for vocabulary building–has a positive impact on students' language development.

Two links (to comprehension and to specific skills) to vocabulary development are discussed below:

Link between vocabulary development and reading comprehension. According to the National Reading Panel (NRP), although a direct causal link between vocabulary development and reading comprehension has not been established by research, still a variety of studies "underscore the notion that comprehension gains and improvement on semantic tasks are results of vocabulary learning" (NICHHD, 2000, pp. 4-15, 4-20, citing 7 studies). Similarly, a longitudinal study on early reading development among British school children found evidence that vocabulary knowledge, as tested at the start of the students' first year of school, was one of three predictors of reading comprehension during the first year, as tested at the start of the students' third year of school–a span of two school years (Muter et al., 2004).

Effects on specific skill areas. According to a review of research on early childhood reading commissioned by the National Research Council (NRC), "Vocabulary instruction generally does result in measurable increase in students' specific word knowledge. Sometimes and to some degree it also results in better performance on global vocabulary measures, such as standardized tests, indicating that the instruction has evidently enhanced the learning of words beyond those directly taught. Second, pooling across studies, vocabulary instruction also appears to produce increases in children's reading comprehension" (Snow, Burns, & Griffin, 1998, p. 217). A review of research conducted by the National Early Literacy Panel indicated that "more complex aspects of oral language, such as grammar, definitional vocabulary, and listening comprehension, had more substantial predictive relations with later conventional literacy skills" (National Institute for Literacy, 2008, p. 78).

Who benefits from vocabulary instruction?

All Students. Research suggests that, when provided with direct instruction, children in Kindergarten and first-grade can acquire sophisticated vocabulary (Beck & McKeown, 2007). The NRP analysis

underscored the fact that development of reading ability is dependent on oral vocabulary: in order for students to understand a word once it has been decoded, it must already be part of their vocabulary (NICHHD, 2000, p. 4-15). Similarly, the NRC report argues that "Learning new concepts and the words that encode them is essential for comprehension development" (Snow, Burns, & Griffin, 1998, p. 217). Based on these factors, it seems reasonable to conclude that even before students can read independently, direct methods for building oral vocabulary may help contribute to students' ultimate success in reading.

Common Core State Standards in English Language Arts:
Standard for Vocabulary Acquisition and Use

Vocabulary acquisition and use is incorporated throughout reading, writing, listening, and speaking instruction.

Examples

Kindergarten:

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on Kindergarten reading and content
- With guidance and support from adults, explore word relationships and nuances in word meanings
- Use words and phrases acquired through conversations, reading, and being read to, and responding to texts

Third-Grade:

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies
- Demonstrate understanding of figurative language, word relationships, and nuances in word meanings
- Acquire and use accurately grade-appropriate conversational, general academic, and domain specific words and phrases, including those that signal spatial and temporal relationships (www.corestandards.org)

Research Recommendations for Vocabulary

Range and Scope of Instruction

Grade Levels. The *Standards* incorporate vocabulary acquisition and use across all grade levels. Grade K-2 materials must provide ample instruction and exercise for those students possessing weak vocabulary knowledge, which may include non-native English speakers. The acquisition of academic vocabulary, or Tier 2 words, is of particular emphasis.

Instructional Methods and Features. Multiple strategies, incorporating direct and indirect vocabulary instruction. Based on research surveyed by the NRP, "It is clear that vocabulary should be taught both directly and indirectly"–that is, using both explicit instruction in vocabulary and methods of decoding word meanings, on the one hand, and more contextual approaches to exposing students to vocabulary on the other (NICHHD, 2000, p. 4-24). Based on both the research results it reviewed and theoretical considerations, the NRP further recommended that reading instruction include a combination of different strategies, both direct and indirect, for building vocabulary, rather than relying on only one method (NICHHD, 2000, p. 4-27).

The *Standards* emphasize that instruction should guide students to extract word meaning from the context in which it is used, and yet provide support for those students unlikely to determine word meaning from text alone. For example, English language learners may require support in mastering high-frequency words that are essential to reading grade-level text.

Instructional Methods and Features
Deriving meaning from context (NICHHD, 2000, 4-23, citing 2 studies) and a combination of context based and definitional approaches (NICHHD, 2000, p. 4-23, citing 2 studies)

"Restructuring the task" of learning new words in a variety of different ways, such as providing redundant information and providing sample sentences along with definitions (NICHHD, 2000, pp. 4-22–4-23, citing 7 studies)

Direct instruction in "vocabulary items that are required for a specific text to be read as part of the lesson" (NICHHD, 2000, pp. 4-24–4-25, citing 4 studies). This includes pre-instruction of vocabulary before the reading or lesson (p. 4-25, citing 3 studies).

Storybook reading. A body of research evidence shows that "reading storybooks aloud to young children . . . results in reliable gains in incidental word acquisition" (Ewers & Brownson, 1999, p. 12, citing 5 additional studies).

"Active student participation," including activities such as student-initiated talk in the context of listening to storybooks (NICHHD, 2000, pp. 4-21, 4-26, 4-27). This calls for active student participation, as in the findings of Ewers and Brownson (1999), who reported on a study in which a storybook with 10 targeted vocabulary words was read aloud individually to 66 kindergarteners. Pretest-posttest comparison found that students in both treatments learned a significant number of the targeted vocabulary words; however, students in the active (question-answering) treatment learned significantly more words than those in the passive treatment. This result was true both of students with a high phonological working memory and of those with a low phonological working memory.

"Richness of context in which words are to be learned," including "extended and rich instruction of vocabulary (applying words to multiple contexts, etc.)" (NICHHD, 2000, pp. 4-22, 4-27). Along similar lines, the NRC report cites a review of studies in which "methods in which children were given both information about the words' definitions and examples of the words' usages in a variety of contexts resulted in the largest gains in both vocabulary and reading comprehension," compared to drill and practice (Snow, Burns, & Griffin, 1998, pp. 217–218, citing Stahl & Fairbanks, 1986). The NRP further recommended that vocabulary items should be "derived from content learning materials" and likely to appear in a variety of other contexts as well (NICHHD, 2000, p. 4-25).

"High frequency and multiple, repeated exposures to vocabulary material" (NICHHD, 2000)

Vocabulary Acquisition Research Recommendations	**Demonstration of Alignment in *Reading Wonders***
Vocabulary development begins in Kindergarten and increasingly focuses on the acquisition of Tier 2 (academic) vocabulary.	In kindergarten and first grade, exposure to new words begins with oral vocabulary development. The "Talk About It" weekly openers help develop oral vocabulary and build background knowledge about the weekly theme. New oral vocabulary words are introduced with the Visual Vocabulary Cards. The words are incorporated and repeated throughout the week to provide multiple exposure and understanding in context. New vocabulary is also introduced through the Literature Big Books and the Interactive Read-Aloud Cards.

	For example, in Grade 1, Unit 1, Week 1, on Day 1 students are introduced to new oral vocabulary with the Visual Vocabulary Words. The words are linked to the theme "At School" and students talk about what they do at school. On Day 2, students review and are introduced to new oral vocabulary words related to the theme using the Visual Vocabulary Cards. Students continue to build on this vocabulary throughout the week by reading and talking about school, using the Interactive Read-Aloud Cards "Schools Around the World" on Day 2, the Literature Big Book on Day 3, and the selections in the Literature Anthology on Day 4 and 5. Beginning in Grade 1, Unit 4, Tier 2 vocabulary words that have been selected from main selection in the Literature Anthology, are introduced each week. In addition, domain-specific words are introduced in context through selections in the Literature Anthology. The Access Complex Text feature provides scaffolding to help students with specific vocabulary in selections. For example, in the Grade 4, Unit 6, Week 4, students are introduced to Tier 2 (academic) vocabulary related to money and economics. Students begin the week by discussing the concept "Money Matters." They use a Concept Web to generate words and phrases related to money. The vocabulary, selected from the Main Selection in the Literature Anthology, for the week includes *economics, entrepreneur*, and *currency*. The Shared Read in the Reading/Writing Workshop "The History of Money" and the selection in the Literature Anthology "The Big Picture of Economics" use these Tier 2 words. Students discuss and write with this academic vocabulary throughout the week. The Access Complex Text feature in the main selection provides additional scaffolding for the vocabulary words *scarcity* and *opportunity*. They have the chance to apply the words when they complete the Research and Inquiry project for the week, Researching World Currencies. In addition, the Readers to Writers feature focuses on how to use content words in writing. Kindergarten Teacher's Edition, Unit 4 pages T11, T25, T41, T49, T87 Grade 1 Teacher's Edition, Unit 1 pages T8-9, T20, T113B, T347B Grade 4 Teacher's Edition, Unit 6 pages T202-

	T203, T206-T207, T217E, T220, T222-223, T230-T231
Reading instruction includes a combination of strategies, both direct and indirect, for building vocabulary.	Reading Wonders includes both direct and indirect strategies to build vocabulary. Students build vocabulary indirectly by listening to, reading, and discussing fiction and nonfiction texts. In Kindergarten and Grade 1, each week of instruction includes reading selections in the Reading/Writing Workshop Big Book, a Literature Big Book, Interactive Read-Aloud Cards, and Leveled Readers. In grades 2 to 6, each week includes reading selections in the Reading/Writing Workshop, the Literature Anthology, an Interactive Read-Aloud, Leveled Readers, and the Classroom Library. Direct vocabulary instruction is also present throughout Reading Wonders. Key vocabulary words are taught to students before reading. Students also learn vocabulary strategies to help them decode word meanings, including identifying inflectional endings, root words, prefixes and suffixes, and Greek and Latin roots. They learn to recognize homophones, homographs, idioms, and figurative language. They learn to use print and online reference materials, including dictionaries and glossaries. For example, in Grade 2, Unit 3, Week 5, the Vocabulary Strategy lesson in the Reading/Writing Workshops teaches the prefixes *re,* and *ex-* and students learn how words parts can help them figure out the meaning of a word. Students practice the strategy in the Leveled Practice Book. Prefixes are also shown and taught in context in the main selection in the Literature Anthology. In Grade 4, Unit 6, Week 3, the Vocabulary Strategy lesson in the Reading/Writing Workshop teaches Latin and Greek Prefixes *non-, pre-*, *bio-*, and *hyper*. Students practice the strategy in the Leveled Practice book. The Latin and Greek Prefixes are also show and taught in context in the main selection in the Literature Anthology. Grade 2 Reading/Writing Workshop, Unit 3 page 253 Grade 4 Reading/Writing Workshop, Unit 6 page 417 Grade 4 Teacher's Edition pages T166-T167, T178,

Vocabulary is taught using a variety of specific instructional methods, such as context-based approaches, restructuring, and pre-instruction in vocabulary before the reading lesson begins.	Pre-instruction, context-based instruction and restructuring are all used to teach vocabulary in Reading Wonders. New vocabulary words are introduced to student each week before they begin reading the selection. The Visual Vocabulary Cards and the Words to Know section in the Reading/Writing Workshop are used to introduce new vocabulary to students before reading. Beginning in Grade 1, students are also taught to use context clues to figure out the meaning of unknown words. Students are taught to use sentence and paragraph clues, definitions and restatements, synonyms, and antonyms throughout. Students are also given opportunities to learn new words in a variety of ways. Sample sentences and multiple definitions are given for the vocabulary words each week. Grade 5 Reading Writing Workshop, Unit 3 pages 164-165 Grade 5 Teacher's Edition, Unit 3 pages T24-25, T102
Storybooks are read aloud to children.	Students have many opportunities to hear storybooks read aloud. In Kindergarten and Grade 1, teachers read and discuss Literature Big Books and Interactive Read Alouds with the class. In addition, the Reading/Writing Workshop are used for Shared Reading. In grades 2-6, each week's lesson begins with an Interactive Read-Aloud. The Reading/Writing Workshop includes the "Shared Read" Main selections in the Literature Anthology can be read aloud. Interactive Read Alouds and Classroom Library Tradebooks are also read aloud to students. Grade 5 Teacher's Edition, Unit 4 page T77 Grade 5 Reading/Writing Workshop, Unit 4 pages 252-255 Grade 5 Literature Anthology, Unit 4 pages 282-291
Students are given both information about the words' definitions and examples of the words' usages in a variety of contexts.	In Reading Wonders, students encounter the vocabulary words in each week's lesson in a variety of contexts. Teachers use the Visual Vocabulary Cards and a Define/Example/Ask routine to introduce vocabulary words. The vocabulary words also appear in "Words to Know" in the Reading/ Writing Workshop. Each word is used in a sentence and is supported by a picture. The words are also used in the Shared

	Read in the Reading/Writing Workshop, in the main selection in the Literature Anthology, and in the Leveled Readers. Students also generate different forms of the word. For example, in Grade 3, Unit 2, Week 2, the word *immigration* is introduced with the Visual Vocabulary Card. The word is defined and used in a sentence. It appears again in "Words to Know" in the Reading/Writing Workshop. The word is used in a sentence and students are prompted to answer a question using the word. The word is encountered and discussed in "Sailing to America" in the Reading/Writing Workshop and "The Castle on Hester Street" in the Literature Anthology. The Approaching, On, and Beyond Leveled Readers for the week include the word *immigration* in the text. Students also generate different forms of the words by removing, changing of adding inflectional endings. Grade 3 Teacher's Edition, Unit 2 page T80 Grade 3 Reading Writing Workshop, Unit2 page 117 Grade 3 Literature Anthology, Unit 2 pages 130-132
Vocabulary items are derived from content learning materials.	In grades 1-6, vocabulary words are taken from the weekly main selection in the Literature Anthology. The words are introduced in the Shared Read and used again the Leveled Readers The students' leveled Practice Books provide further word exploration. Leveled readers and the Classroom Library also reinforce vocabulary development. In addition, domain-specific vocabulary words used in the Literature Anthology selections are identified and taught. Grade 5 Reading Writing Workshop, Unit 3 pages 166-169 Grade 5 Literature Anthology, Unit 3 pages 182-193 Grade 5 Leveled Reader Unit 3, Week 1
Vocabulary is taught through active (question-answering) student participation.	In Reading Wonders, the vocabulary lessons incorporate active student participation throughout. Each week, new vocabulary is introduced using the Visual Vocabulary Cards. The Vocabulary Routine on the cards ends by asking students a question related to the word. After the new vocabulary has been introduced, students discuss the new words with a partner and write questions using the words. This type of

	active student participation continues throughout the week. Students discuss the words with other students, practice using the words, and write with the words. For example, in Grade 5, Unit 1, Week 2, on Day 1 students practice using the new vocabulary by answering questions that use the new words. On Day 2, they are asked to generate new forms of the words by adding, changing, or removing inflectional endings. On Day 3, students complete sentence stems using the words. On Day 4, student write sentences in their word study notebooks using the words. On Day 5, they complete Word Squares for each vocabulary word. In the first square, they write the word. In the second square, they write a definition, in the third square, they draw an illustration that will help them remember the word. In the fourth square, students write antonyms for the word. Student share and discuss their word squares with a partner. Grade 2 Your Turn Practice Book, Unit 1 pages 1-2, 30 Teacher's Edition Grade 5, Unit 2 pages T78-T79 Grade 5 Your Turn Practice Book, Unit 2 pages 68
Word recognition is regularly assessed in multiple ways.	Assessment matches instructional context. In Leveled Practice Books, students choose vocabulary words from a list to complete each sentence. They write original sentences using the vocabulary words. Words are highlighted in the reading selections, and students stop at each word and identify clues to the meanings. They suggest or review the meanings as well. They complete graphic organizers such as semantic webs, and they add words to the Word Wall. Students also use a Practice Book page each week to demonstrate pronunciation and comprehension of vocabulary words. Weekly Assessments and Unit Test provide formal assessments of students' progress. Grade 3 Your Turn Practice Book, Unit 2 page 68 Grade 3 Teacher's Edition, Unit 2 page T143 Grade 5 Your Turn Practice Book, Unit 2 page 71
Additional instruction is provided for those students who need support mastering high-frequency words.	In K-1, the Visual Vocabulary Cards include high-frequency words. High-frequency words are also covered in the daily Word Work section. In grades 2-6, the small group lessons for Approaching level students include high-

	frequency word review each week. The high-frequency words cards can be used for repeated practice. Tier 2 Intervention Fluency Teacher's Edition Guides also include additional instruction of high-frequency words. Kindergarten Teacher's Edition, Unit 4 page T17 Grade 3 Teacher's Edition, Unit 2 page T112 K- 2 Tier 2 Intervention Fluency Teacher's Edition page 38

Conventions of Standard English and Knowledge of Language

Language choice is a matter of craft for both writers and speakers

*(*Common Core State Standards for English Language Arts, Appendix A*, p 28)*

What is meant by 'conventions of standard English' and 'knowledge of language'?

Conventions of standard English include grammatical structures, usage and mechanics, or the 'nuts and bolts' of writing and speaking. For example, students are expected to develop well-constructed sentences that contain correct spelling, punctuation, and grammar. Knowledge of language includes, for example, the ability to select words for effect, compare and contrast varieties of English (e.g., dialects and registers), and differentiate contexts that require formal English from those contexts where informal usage is acceptable and appropriate. In conjunction, students must develop knowledge regarding the 'digital mechanics' of audio-visual formats (Rice, 2008). These are elements that students must master as they increase the range and complexity of encountered text, engage in academic and social discourse, and as they prepare written communications.

Why is instruction important?

The conventions of Standard English and language use and structure extend into all literacy domains, including reading, writing, and speaking and listening. Students benefit from instruction for the following reasons:

- Students who gain control over Standard English grammar, usage, and mechanics are better able to effectively communicate their ideas, knowledge, and opinions through oral discussions and written work.
- Students who gain control over conventions of Standard English grammar, usage, and mechanics can more easily master the use of digital texts than students who lack this control.
- The ability to manipulate the language orally as well as the ability to decode words supports vocabulary development (www.readtennessee.org)

Who benefits from instruction?

All Students. It is recommended that, "an essential element in developing a comprehensive writing policy is the identification of effective instructional procedures, not just at the secondary level…but with younger students as well" (Saddler & Graham, 2005, p 43). The goal of explicit, strategic writing instruction is two-fold: first, to enhance the writing skills all children, from early elementary school on; and second, to minimize the number of children who experience difficulties learning to write (Graham & Harris, 2002). Writing instruction benefits all students, as"the teaching of writing skills such as grammar and spelling reinforces reading skills" (Graham & Herbert, 2010, p. 7).

Common Core State Standards in English Language Arts: Standard for Conventions of Standard English and Knowledge of Language:

Demonstrate command of the conventions of Standard English grammar and usage when writing and speaking. Use knowledge of language and its conventions when writing, speaking, reading, or listening.

Conventions of Standard English are addressed for grades Kindergarten and above. Knowledge of Language begins in grade 2.

Examples

Kindergarten

- Print upper- and lowercase letters
- Use frequently occurring nouns and verbs
- Produce and expand complete sentences in shared language activities
- Understand and use question words (e.g., who, what, where, when, why, how)

Third-Grade

- Form and use regular and irregular verbs
- Produce simple, compound, and complex sentences
- Use spelling patterns and generalizations in writing words
- Ensure subject-verb and pronoun-antecedent agreement

Research Recommendations Conventions of Standard English and Knowledge of Language

Range and Scope of Instruction

Grade Level. Explicit instruction on conventions of Standard English begin in Kindergarten and extend throughout the later grades. Knowledge of language begins in grade 2. Graham and Harris (1994) recommend direct, skill-oriented instruction designed to foster text-production skills (e.g., spelling, grammar). For example, fourth-grade students identified as either more or less skilled in their writing benefitted from strategic instruction designed to improve their ability to construct sentences (Saddler & Graham, 2005). Teaching basic skills, such as grammar within the context of writing— instead of teaching them in isolation—has been shown to enhance writing performance (Fearn & Farnan, 2007).

Conventions of Language Research Recommendations	Demonstration of Alignment in *Reading Wonders*
Students participate in shared-language activities to refine and develop their language skills.	Shared-language activities are integrated into daily instruction throughout the grades. Teachers encourage students to express their ideas in a thoughtful and organized manner, while incorporating the specific lessons being taught hat week. **All Grades:** Students regularly participate in Collaborative Conversations as they discuss the weekly topics and concepts, talk about selections read, and practice skills in partner activities. Students share ideas speaking in complete sentences, using conventions of Standard English and incorporating the academic vocabulary they have been learning. Teachers model how to speak clearly using more formal standard English in discussions and responses to questions. Students are guided to speak clearly and coherently, using the more formal Standard English conventions while

	speaking and listening carefully and respectfully to others. At Kindergarten and Grade 1, students engage in shared and interactive writing activities. During these activities, specific grammar and usage skills are introduced, practiced and applied. In Grades 1-6, as students revise and edit their own writing each week, students discuss revisions and edits in peer conferences. In Grades K-6, the daily grammar lessons ask students to work together to practice and apply conventions of grammar and usage in writing and speaking and listening activities. These oral activities are identified by the "Talk about It" label in the lessons. Grade 1 Teacher's Edition: T9, T18, T19, T114–T115 Grade 2 Teacher's Edition, Unit 1: T8, T36, T54–T55 Grade 3 Teacher's Edition, Unit 1 pages T10, T34–T35, T36–T37 Grade 4 Teacher's Edition, Unit 1 pages T10, T32–T33, T34–T35
Students receive strategic, direct instruction regarding the "rules" of formal written and spoken English.	Explicit instruction on conventions of Standard English is provided throughout all grade levels. Through daily lessons and activities, students develop understanding of the conventions of Standard English grammar, usage, and mechanics. This knowledge of language allows students to effectively communicate their ideas, knowledge, and opinions in writing and in speaking **All Grades:** Daily direct and explicit instruction in standard English grammar, mechanics and usages is provided throughout grades K-6. Grammar is taught in the context of writing. After instruction and guided practice in a particular skill, students apply that skill in speaking activities as well as in their writing At Grades K-6, the Readers to Writers pages in the Reading/Writing Workshop teach grammar rules as it applies to student writing. At Grades 2-6, the Grammar Handbook provides specific rules and instruction, as well as activities for practice. Students use the Grammar Handbook as a resource to develop their own writing.

	Grammar Practice pages provided for grades 1-6 are also another opportunity for students to review and practice the rules of formal English. A variety of interactive grammar games and activities that offer practice in grammar, mechanics and usage can be found on the Student Workspace at www.connected.mcgraw-hill.com. Kindergarten Teacher's Edition, Unit 1 page T19 Kindergarten Reading/Writing Workshop page 56 Grade 1 Teacher's Edition, Unit 1 page T115 Grade 1 Reading/Writing Workshop pages 46–47; Grade 1 Grammar Practice Book pages 1–5 Grade 5 Teacher's Edition, Unit 1 pages T34–T35 Grade 5 Reading/Writing Workshop pages 30–31; Grade 5 Grammar Practice Book pages 1–5
Students approach language as a matter of craft, and make informed choices among alternatives.	Students are taught to analyze expert models, student models, and their own writing in regards to the use of language. The instruction in *Reading Wonders* emphasizes the power of revision, focusing on the use of language as a craft to improve the effectiveness of writing and speaking. **All Grades:** Across all grades, the Readers to Writers weekly lessons in the Reading/Writing Workshop teaches students how to revise for grammar and usage, such as sentence fluency, or use of punctuation to make their writing more effective. To help develop their proficiency in revising their writing, students are taught to look at how the conventions of language affect their writing. In teacher conferences and peer conferences each week. Choices on how to revise the use of language are discussed. Speaking Checklists and Presentation Rubrics also emphasize the effectiveness of the proper use of language in speaking to an audience. The Workstation Writing Activity Cards provide additional practice in revising writing. Grade 1 Teacher's Edition, Unit 1 pages T50, T114–T115, T402 Grade 1 Reading/Writing Workshop pages 46–47 Grade 3 Teacher's Edition, unit 1 pages T34–T35 T342 Grade 3 Reading/Writing Workshop pages 32–33

	Grade 4 Teacher's Edition, Unit 1 pages T32–T33, T334 Grade 4 Reading/Writing Workshop pages 30–31

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Synopsis of Findings and Technical Appendix

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Technical Appendix (IESD)

IESD Research:
McGraw-Hill Education

- Recent research related to reading instruction was identified through a combination of referral by reading experts and review of important research journals.

McGraw-Hill Education has a longstanding tradition and commitment to helping every child learn to read–a tradition that continues today with McGraw-Hill Education's *Reading Wonders*. Our commitment to helping all American children master the skills and strategies they need to become successful readers and lifelong learners is as strong as ever.

Increasingly, federal, state, and local requirements in every area focus on the need for research-verified instructional strategies, methods, and approaches. McGraw-Hill Education *Reading Wonders* has stepped up to this challenge by identifying reputable research related to effective reading instruction, summarizing relevant instructional recommendations based on that research, and then showing how those recommendations are incorporated into McGraw-Hill Education *Reading Wonders*. This paper presents the results of that research-based process.

Development of this research-based white paper included the following steps.

- Recent research related to reading instruction was identified through a combination of referral by reading experts and review of important research journals.
- Research sources were reviewed and summarized, with special reference to
  - Details of the supporting research evidence
  - Strength of the link between the research and specific instructional recommendations.

Sources and findings were excluded which failed in one of these respects, or in overall quality of the research as reported.

- Cross-comparison of the research-based recommendations and McGraw-Hill Education Reading verified that each research-based recommendation listed in this white paper is supported by McGraw-Hill Education Reading Research Sources.

This paper summarizes key research findings and research-based recommendations related to effective reading instruction from several key sources:

- Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups (National Institute of Child Health and Human Development [NICHHD], 2000). This source presents an extensive, detailed research review related to five broad categories (see above under Reading First Content Focus). In cases where the data were of sufficient quality and uniformity, research results were summarized in a meta-analysis, a method for statistically combining research results across an entire body of research studies.
- Preventing reading difficulties in young children, a review of research on early childhood reading commissioned by the National Research Council (Snow, Burns, & Griffin, 1998). This source represents a broad-ranging research summary and review, but without inclusion of specific details of the research.
- Writing to Read: Evidence for How Writing Can Improve Reading. A Report from the Carnegie Corporation of New York (Graham & Herbert, 2010). This document provides a meta-analysis of research on the effects of specific types of writing interventions found to enhance students' reading skills.

- Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools. A Report from the Carnegie Corporation of New York (Graham & Perin, 2007). This report provides a review of research-based techniques designed to enhance the writing skills of 4th to 12th grade students.
- Improving Reading Comprehension in Kindergarten Through 3rd Grade: A Practice Guide. (Shanahan, Callison, Carriere, Duke, Pearson, Schatschneider, & Torgesen, 2010). This article contains recommended research-based practices in reading, according to level of evidence assigned by a panel of experts.

Additionally, specific findings have been incorporated from other recent, reputable research related to reading development, instruction, and assessment:

Correlation

Barger, J. (2003). Comparing the DIBELS oral reading fluency indicator and the North Carolina end of grade reading assessment. (Technical Report). Asheville: North Carolina Teacher Academy.

Quasi-experimental

Beck, I.L., & McKeown, G. (2007). Increasing young children's oral vocabulary repertoires through rich and focused instruction. The Elementary School Journal, 107(3), 251-271.

Correlation

Buck, J., & Torgesen, J. (2003). The relationship between performance on a measure of oral reading fluency and performance on the Florida Comprehensive Assessment Test. (FCRR Technical Report No. 1). Tallahassee: Florida Center for Reading Research. Retrieved September 2005 from the DIBELS Technical Reports webpage: http://dibels.uoregon.edu/techreports/index.php

Cooper, D.H., Roth, F.P., Speece, D. L. & Schatschneider, C. (2002). The contribution of oral language skills to the development of phonological awareness. Applied Psycholinguistics, 23, 399 – 416

Correlation

Elbro, C., & Petersen, D. K. (2004). Long-term effects of phoneme awareness and letter sound training: An intervention study with children at risk for dyslexia. Journal of Educational Psychology, 96(4), 660-670.

Experimentall Quasi-experimental

Ewers, C. A., & Brownson, S. M. (1999). Kindergartners' vocabulary acquisition as a function of active vs. passive storybook reading, prior vocabulary, and working memory. Journal of Reading Psychology, 20, 11-20.

Experimental

Fearn, L., & Farnan, N. (2007). When is a verb? Using functional grammar to teach writing. Journal of Basic Writing, 26(1), 63 – 87.

Fuchs, L. S., Fuchs, D., Hosp, M.D., & Jenkins, J.R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. Scientific Studies of Reading, 5(3), 239-256.

Research review/ research-based theoretical analysis

Good, III, R.H., Simmons, D.C., & Kame'enui, E.J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. Scientific Studies of Reading, 5(3), 257-288.

Meta-Analysis

Graham, S. & Herbert, M.A. (2010). Writing to read: Evidence for how writing can improve reading. A Carnegie Corporation Time to Act Report. Washington, DC: Alliance for Excellent Education

Correlation

Hasbrouck, J., & Tindal, G. A. (2006). Oral reading fluency norms: A valuable tool for reading teachers. The Reading Teacher, 59(7), 636-644.

Norming research

Jenkins, J.R., Fuchs, L.S., van den Broek, P., Espin, C., & Deno, S.L. (2003). Sources of individual differences in reading comprehension and reading fluency. Journal of Educational Psychology, 95(4), 719-729.

Experimental

Lever, R., & Senechal, M. (2011). Discussing stories: On how a dialogic reading intervention improves Kindergarteners' oral narrative construction. Journal of Experimental Child Psychology, 108(1), 1-24.

Miller, J.F., Heilmann, J., & Nockerts, A. (2006). Oral language and reading in bilingual children. Learning Disabilities Research & Practice, 21(1), 30-43.

Correlation and statistical modeling

Morris, D., Bloodgood, J. W., Lomax, R. G., & Perney, J. (2003). Developmental steps in learning to read: A longitudinal study in kindergarten and first grade. Reading Research Quarterly, 38(3), 302-328.

Statistical modeling

Muter, V., Hulme, C., Snowling, M. J., & Stevenson, J. (2004). Phonemes, rimes, vocabulary, and grammatical skills as foundations of early reading development: Evidence from a longitudinal study. Developmental Psychology, 40(5), 665-681.

Olinghouse, N.G., & Graham, S. (2009). The relationship between the discourse knowledge and the writing performance of elementary-grade students. Journal of Educational Psychology, 101(1), 37-50

Saddler, B., & Graham, S. (2005). The effects of peer-assisted sentence-combining instruction on the writing performance of more and less skilled young writers. Journal of Educational Psychology, 97(1), 43-54

Statistical modeling

Shaw, R., & Shaw, D. (2002). DIBELS oral reading fluency-based indicators of third grade reading skills for Colorado State Assessment Program (CSAP). (Technical Report). Eugene: University of Oregon. Retrieved September 2005 from the DIBELS Technical Reports webpage: http://dibels.uoregon.edu/techreports/index. php

Slavin, R.E., Lake, C., Davis, S., & Madden, N.A. (2011). Effective programs for struggling readers: A best-evidence synthesis. Educational Research Review, 6, 1-26.

Stuart, M. (2004). Getting ready for reading: A follow-up study of inner-city second language learners at he end of key state 1. British Journal of Educational Psychology, 74, 15 – 36.

Correlation

van Bon, W. H. J., & van Leeuwe, J. F .J. (2003). Assessing phonemic awareness inkindergarten: The case for the phoneme recognition task. Applied Psycholinguistics, 24, 195-219.

Statistical modeling

Wilson, J. (2005). The relationship of Dynamic Indicators of Basic Early Literacy Skills (DIBELS) oral reading fluency to performance on Arizona Instrument to Measure Standards (AIMS). (Research Brief). Assessment and Evaluation Department, Tempe School District No. 3. Retrieved September 2005 from the DIBELS Technical Reports webpage: http://dibels.uoregon.edu/techreports/index.php

Statistical Modeling

Wise, J.C., Sevcik, R.A., Morris, R.D., Lovett, M.W., & Wolf, M. (2007). The relationship among receptive and expressive vocabulary, listening comprehension, pre-reading skills, word identification skills, and reading comprehension by children with reading disabilities. Journal of Speech, Language, and Hearing Research, 50, 1093-1109

Statistical Modeling

Young-Suk, K., Otaiba, S. A., Puranik, C., & Folson, J. S. (2011). Componential skills of beginning writing: An exploratory study. Learning and Individual Differences, 21, 517-525.

Key Research in topics aligned with the *Common Core State Standards*:

- Reading Comprehension and Text
- Reading Foundations, which include:
  - Phonological Awareness
  - Phonics and Word Recognition
  - Fluency
- Writing
- Speaking and Listening
- Language, which includes:
  - Vocabulary Acquisition and Use
  - Conventions of Standard English and Knowledge of Language

Reading Instruction
Each section presents a summary of relevant research findings and recommendations. Top-level descriptions of each research finding and research-based recommendation are presented in the main text, with details of the supporting research provided in footnotes.

Reading: Comprehension and Text

Comprehension is often identified as the primary goal of reading: children and adults read in order to understand. If children can "read" words but cannot understand them, they are merely decoding. Real reading requires understanding. Over the past 30 years, reading researchers have come to understand that such comprehension is not merely passive, but is the result of active involvement on the part of the reader.

Researchers have identified a variety of strategies effective readers use in order to actively comprehend texts. Additional research has verified the positive impact of teaching such strategies to students as a means of improving comprehension.

- Effectiveness of comprehension instruction. In examining research on reading comprehension instruction, the National Reading Panel (NRP) identified 16 broad categories, or methods, of comprehension instruction. Of these, seven methods were identified as having "a firm scientific basis for concluding that they improve comprehension in normal readers" (NICHHD, 2000, p. 4-42)–demonstrating that comprehension can be improved through explicit, formal instruction. Five of these methods were in use by the third- grade level, and are thus research-verified as appropriate and effective for instruction in the early elementary grades. Similarly, a review of research on early childhood reading commissioned by the National Research Council (NRC) concluded that "Explicit instruction in comprehension strategies has been shown to lead to improvement" (Snow, Burns, & Griffin, 1998, p. 322).
- Effects on specific skill areas. According to the NRP, research "favors the conclusion that teaching of a variety of reading comprehension strategies leads to increased learning of the strategies, to specific transfer of learning, to increased memory and understanding of new passages, and, in some cases, to general improvements in comprehension" (NICHHD, 2000, p. 4-52).
- Grade levels. The NRP's review of research verified the effectiveness of some methods of text comprehension instruction as early as grades 2-3, ranging up to grade 9. The NRC, based on its interpretation of the research evidence, recommended such instruction as early as the kindergarten and first- grade levels, advocating explicit instruction on text comprehension "throughout the early grades" (Snow, Burns, & Griffin, 1998, p. 323). A study conducted by Lever and Senechal (2011)[1] found that dialogic reading, or a discussion of text through elaborative questioning, was found to have positive impacts on the structure and content of children's narratives.

Range and Scope of Instruction

- Early grades. According to the NRC report recommendations for reading instruction in grades K-3, "Throughout the early grades, reading curricula should include explicit instruction on strategies such as summarizing the main idea, predicting events and outcomes of upcoming text, drawing inferences, and monitoring for coherence and misunderstandings. This instruction can take place while adults read to students or when students read [to] themselves" (Snow, Burns, & Griffin, 1998, p. 323). More recently, What Works Clearinghouse released a review (Shanahan et.al, 2010)[2] citing "strong research evidence" demonstrating that reading comprehension is improved through explicit teaching in grades K-3.
- Grade levels for comprehension strategies. Of the seven instructional methods verified by the NRP as having a research base, one (comprehension monitoring) was in use by grade 2 in the studies examined, and an additional four were in use by grade 3. The NRP concluded that "the instruction of comprehension appears to be effective on grades 3 through 6" (NICHHD, 2000, p. 4-51). This suggests a solid research base for including comprehension instruction as part of the reading curriculum by the third- grade level.

In addition to this NRP-verified research base in the upper elementary grades, many research-based instructional recommendations, such as those from the NRC, and many state standards call for explicit comprehension instruction at earlier grades as well. Such instruction may help to build a foundation for development of such skills in later grades. It is worth noting that the lack of NRP verification for comprehension instruction at the K–2 levels appears to reflect a scarcity of reputable research on comprehension instruction at these grade levels–a lack of evidence, as opposed to negative or ambivalent evidence.

Instructional Methods and Features

- Specific effective methods. Methods that were identified by the NRP as having "a firm scientific basis for concluding that they improve comprehension in normal readers" (NICHHD, 2000, p. 4-42) and that were used by grade 3 in the research studies included the following:

Question answering (17 studies, mostly grades 3–5), in which teachers ask questions about the Text[3]

Question generation (27 studies, grades 3–9), in which students "generate questions during reading" (NICHHD, 2000, p. 4-45)[4]

Story structure (17 studies, grades 3–6), in which students are instructed in the "content and organization of stories," including use of graphic organizers in conjunction with story content and structure (NICHHD, 2000, p. 4-45)[5]

Comprehension monitoring (22 studies, grades 2–6), in which students learn how to monitor their own understanding of texts using procedures such as think-aloud[6]

Cooperative learning (10 studies, grades 3–6), in which "peers instruct or interact over the use of reading strategies" (NICHHD, 2000, p. 4-45)[7]

Methods identified by Shanahan, et.al, (2010) as having 'strong evidence' include:
Teaching students to use comprehension strategies, such as:

- Activating prior knowledge, or predicting (5 studies)[8]
- Questioning (4 studies)[9] when taught in conjunction with other strategies
- Visualization (2 studies)[10]
- Monitoring and clarifying (3 studies)[11]
- Inference training (1 study)[12]
- Retelling (4 studies)[13]

Methods identified by Shanahan, et.al, (2010) as having 'moderate evidence' include:

- Identifying text structure (5 studies, 3 using narrative text, 2 using informational text)[14], in which students were taught to understand text structure through story-mapping, paying attention to story structure during retelling, using cause-effect statements and related clue words, for example.
- Cooperative learning (10 studies)[15]
- Multiple strategies. In looking at 36 studies featuring instruction that combined a variety of different comprehension methods, the NRP concluded that "considerable success has been found in improving comprehension by instructing students on the use of more than one strategy during the course of reading" (NICHHD, 2000, p. 4-47).[16] One particular advantage of this approach is its ability to guide students through the kind of "coordinated and flexible use of several different kinds of strategies" that is required for skilled reading (NICHHD, 2000, p. 4-47).
- Instructional model. In its discussion of the research, the NRP identified a four-part model for building student comprehension strategies in which "teachers demonstrate, explain, model, and implement interaction with students in teaching them how to comprehend a text" (NICHHD, 2000, p. 4-47, citing 6 studies).[17]

- Regular assessment. According to the NRC report, "Conceptual knowledge and comprehension strategies should be regularly assessed in the classroom, permitting timely and effective instructional response where difficulty or delay is apparent" (Snow, Burns, & Griffin, 1998, p. 323).

[1] Participants included 40 Kindergarten students randomly assigned to either the diaglogic reading group (n=21) or the alternative group (n=19). Those in the diaglogic reading group evidenced higher story grammar scores on the production task ($p = .001$, $d = .38$) and the retelling task ($p = .032$, $d=.28$).

[2] Shanahan, et.al, (2010) reviewed 812 studies, 27 of which met What Works Clearinghouse standards with or without reservations. These studies represent the strongest evidence of the effectiveness of various practices on reading comprehension for students in grades K – 3.

[3] Anderson & Biddle, 1975; Ezell et al., 1992; Fischer, 1973; Garner, Hare, Alexander, Haynes, & Winograd, 1984; Garner, Macready, & Wagoner, 1984; Griffey et al., 1988; Levin & Pressley, 1981; Pressley & Forrest-Pressley, 1985; Raphael & McKinney, 1983; Raphael & Pearson, 1985; Raphael & Wonnacott, 1985; Richmond, 1976; Rowls, 1976; Serenty & Dean, 1986; Sheldon, 1984; Watts, 1973; Wixson, 1983.

[4] Blaha, 1979; Brady, 1990; Cohen, 1983; Davey & McBride, 1986; Dermody, 1988; Dreher & Gambrell, 1985; Hansen & Pearson, 1983; Helfeldt & Lalik, 1976; King, 1989; King, 1990; King, 1992; Labercane & Battle, 1987; Lonberger, 1988; Lysynchuk, Pressley, & Vye, 1990; MacGregor, 1988; Manzo, 1969; Nolte & Singer, 1985; Palinscar, 1987; Palinscar & Brown, 1984; Ritchie, 1985; Short & Ryan, 1984; Simpson, 1989; Singer & Donlan, 1982; Smith, 1977; Taylor & Frye, 1992; Williamson, 1989; Wong & Jones, 1982.

[5] Baumann & Bergeron, 1993; Buss, Ratliff, & Irion, 1985; Fitzgerald & Spiegel, 1983; Gordon & Rennie, 1987; Greenewald & Rossing, 1986; Griffey et al., 1988; Idol, 1987; Idol & Croll, 1987; Nolte & Singer, 1985; Omanson, Beck, Voss, McKeown, et al., 1984; Reutzel, 1984; Reutzel, 1985; Reutzel, 1986; Short & Ryan, 1984; Singer & Donlan, 1982; Spiegel & Fitzgerald, 1986; Varnhagen & Goldman, 1986.

[6] Babbs, 1984; Baker & Zimlin, 1989; Baumann, Seifert-Kessell, & Jones, 1992; Block, 1993; Carr, Dewitz, & Patberg, 1983; Cross & Paris, 1988; Elliot-Faust & Pressley, 1986; Hasselhorn & Koerkel, 1986; Markman, 1977; Miller, 1985; Miller, 1987; Miller, Giovenco, & Rentiers, 1987; Nelson et al., 1996; Paris, Cross, & Lipson, 1984; Paris & Jacobs, 1984; Paris, Saarnio, & Cross, 1986; Payne & Manning, 1992; Schmitt, 1988; Schunk & Rice, 1984; Schunk & Rice, 1985; Silven, 1992; Tregaskes & Daines, 1989.

[7] Bramlett, 1994; Guthrie et al., 1996; Judy, Alexander, Kulikowich, & Wilson, 1988; Klingner, Vaughn, & Schumm, 1998; Mathes et al., 1994; Pickens & McNaughton, 1988; Soriano, Vidal-Abarca, & Miranda, 1996; Stevens, Madden, Slavin, & Farnish, 1987; Stevens, Slavin, & Farnish, 1991; Uttero, 1988.

[8] Brown et.al, 1995; Hansen, 1981; Paris, Cross, & Lipson 1984; Williamson, 1989; Morrow, 1984.

[9] Brown et.al, 1995; Williamson 1989; McGee & Johnson, 2003; Morrow 1984.

[10] Center, et.al, 1999; Brown et.al., 1995

[11] Brown et.al, 1995; Paris, Cross, and Lipson, 1984; Williamson, 1989.

[12] Hansen, 1981.

[13] Brown et.al., 1995; Morrow, 1985; Morrow, Pressley, & Smith, 1995; Williamson, 1989.

[14] Baumann & Bergeron, 1993; Morrow, 1996; Reutzel, Smith, & Fawson, 2005; Williams et.al., 2007; Morrow, 1984.

[15] Gutherie et.al. 2004; Morrow, 1996; Morrow, Pressley, & Smith, 1995; Morrow, Rand, & Young, 1997; Stevens & Slavin, 1995a, 1995b; Fizzano, 2000; Gutherie et.al, 2006; Baumann 1986; Baumann & Gergeron, 1993.

[16] Adams, Carnine, & Gersten, 1982; Anderson & Roit, 1993; Blanchard, 1980; Brady, 1990; Brown, Pressley, Van Meter, & Schuder, 1996; Carnine & Kinder, 1985; Carr, Bigler, & Morningstar, 1991; Chan & Cole, 1986; Dermody, 1988; Fischer Galbert, 1989; Gilroy & Moore, 1988; Grant, Elias, & Broerse, 1989; Jacobs & Paris, 1987; Jones, 1987; Kelly, Moore, & Tuck, 1994; Klingner, Vaughn, & Schumm, 1998; Labercane & Battle, 1987; Loranger, 1997; Lysynchuk, Pressley, & Vye, 1990; Padron, 1985; Palinscar, 1987; Palinscar & Brown, 1984; Palinscar, David, Winn, & Stevens, 1991; Pelow & Colvin, 1983; Reutzel & Hollingsworth, 1991a; Reutzel & Hollingsworth, 1991b; Rich, 1989; Ritchie, 1985; Rush & Milburn, 1988; Shortland-Jones, 1986; Sindelar, 1982; Smith, Johnson, & Johnson, 1981; Soriano, Vidal-Abarca, & Miranda, 1996; Stevens, 1988; Taylor & Frye, 1992; Williamson, 1989.

[17] Palinscar & Brown, 1984; Rosenshine, Meister, & Chapman, 1996; Rosenshine & Meister, 1994; Bereiter & Bird, 1985; Block, 1993; Brown, Pressley, Van Meter, & Schuder, 1996.

Phonological Awareness

Phonological awareness includes the ability to work with larger units in spoken language such as syllables and rhymes, which often include more than one phoneme. Children typically find it easier to work with these larger units (e.g., rhyming words) before proceeding on to develop skills with individual phonemes (NICHHD, 2000, p. 2-10).

Strong phonemic awareness is considered an early indicator of eventual success in beginning reading. Phonemic awareness instruction helps children learn to read words, spell words, and comprehend text.

- Phonemic awareness instruction has a positive overall effect on reading and spelling. A meta-analysis by the National Reading Panel (NRP) found that instruction in phonemic awareness (PA) had a "moderate" effect on both reading skills (based on 90 comparisons)[18] and spelling (39 comparisons) (NICHHD, 2000, pp. 2-3, 2-63, 2-69).[19] Results across several categories of assessments "show that teaching children to manipulate phonemes in words was highly effective across all the literacy domains and outcomes" (p. 2-3).
- Phonemic awareness instruction leads to lasting reading improvement. The NRP meta-analysis found that the effect of PA instruction on reading outcomes was moderate on both immediate and first follow-up post-tests, and small on second follow-up posttests (NICHHD, 2000, p. 2-63).[20] Based on these results, the NRP concluded that "effects of PA training on reading lasted well beyond the end of training" (NICHHD, 2000, p. 2-5).
- Phonemic awareness instruction can be effectively carried out by teachers. PA instruction had a positive impact on students' reading and spelling, whether the instruction was carried out by classroom teachers or by individuals with specialized training, such as researchers (NICHHD, 2000, pp. 2-65, 2-74).[21]

Additionally, the National Early Literacy Panel (2008) reports that phonological awareness was one of six precursor literacy skills (e.g., alphabet knowledge, rapid automatic naming, phonological memory, writing name, rapid automatic naming of objects or colors) that had medium to large predictive relationships with later measures of literacy development (National Institute for Literacy, 2008, p vii.).[22]

Reading

PA instruction has been shown to have a positive impact on reading skills across many student categories and grade levels (NICHHD, 2000, pp. 2-5, 2-66–2-67):

- Normally developing readers[23]
- Children at risk for future reading problems.[24]

Later research suggests the benefits of PA instruction specifically for kindergartners at risk for developing dyslexia (Elbro & Petersen, 2004).[25]

- Disabled readers[26]
- Preschoolers[27]
- Kindergartners[28]
- First-graders[29]
- Second- through 6th-graders (most of whom were disabled readers)[30]
- Children across various SES (socioeconomic status) levels[31]
- Children learning to read in English as well as in other languages[32]

In a review of 97 studies on the achievement outcomes of various approaches for teaching struggling readers, "almost all successful programs have a strong emphasis on phonics" (Slavin, Lake, Davis, & Madden, 2011, p 19).[33]

Spelling

PA instruction has been shown to have a positive impact on spelling skills across many student categories and grade levels (NICHHD, 2000, pp. 2-6, 2-70–2-74):

- Kindergartners[34]
- First-graders[35]
- Children at risk for future reading problems[36]
- Normally developing readers[37]
- Children across various SES levels[38]
- Children learning to spell in English as well as children learning in other languages[39]

The following tasks are commonly used to assess PA skills and/or teach them to students (NICHHD, 2000, p. 2-2):

- Phoneme isolation–Recognizing individual sounds in words. For example: What sound do you hear at the beginning of pin? (/p/)
- Phoneme identification–Recognizing the common sound in different words. For example: What sound do you hear that is the same in sat, sun, and soup? (/s/)
- Phoneme categorization–Recognizing the odd sound in a set of words. For example: Listen to these words–hand, heart, sun. Which word begins with a different sound? (sun)
- Phoneme blending–Listening to a sequence of separately spoken sounds and then blending them naturally into a recognizable word. For example: What word is /b/ - /a/ - /t/? (bat)
- Phoneme segmentation–Breaking a word into its sounds by tapping out or counting the sounds. For example: How many sounds do you hear in cat? (three)
- Phoneme deletion–Recognizing the word that remains when a specific phoneme is removed. For example: What word do we have when we say smile without the /s/? (mile)

Range and scope of instruction

- Grade level. Research summarized by the NRP suggests that PA instruction should be provided
  - At the kindergarten level
  - At the first-grade level
  - At elementary levels above first grade as supplemental instruction for students with special needs.

Similarly, a review of research on early childhood reading commissioned by the National Research Council (NRC) concluded that "kindergarten instruction should be designed to provide practice with the sound structure of words [and] the recognition and production of letters," and "first-grade instruction should be designed to provide explicit instruction and practice with sound structures that lead to phonemic awareness" (Snow, Burns, & Griffin, 1998, p. 322).

Instructional methods and features

- Spoken and written versus spoken only. Instruction that used letters to teach phoneme manipulation had a considerably greater impact on both reading and spelling than instruction that did not use letters but was limited to spoken sounds only (NICHHD, 2000, pp. 2-64, 2-73).[40]
- Assessment for kindergarteners based on phoneme recognition. A study of Dutch children analyzing the relationship among several different assessments of PA found that a group-administered phoneme recognition assessment was the "best paper and pencil representative" of PA

skill in kindergarten,[41] and that it "equals phoneme segmentation" (an individually administered assessment) in "sensitivity and specificity when predicting later literacy failure" (van Bon & van Leeuwe, 2003, p. 195).[42] These findings suggest that a group-administered assessment based on phoneme recognition can serve as a useful screening tool for identifying the general level of students' PA skills in kindergarten, which in turn is a useful indicator of students who might need targeted PA skills intervention.

- Guidance by initial and ongoing assessment at first and second grades. Based on the research findings, the NRP recommended a design in which assessment results drive PA instruction at the first- and second-grade levels, both initially and through ongoing formative assessments.

Assessments conducted before PA instruction begins should "indicate which children need the instruction and which do not, which children need to be taught rudimentary levels of PA (e.g., segmenting initial sounds in words), and which children need more advanced levels involving segmenting or blending with letters" (NICHHD, 2000, p. 2-6).

In order to determine the length of PA instruction, "What is probably most important is to tailor training time to student learning by assessing who has and who has not acquired the skills being taught as training proceeds" (NICHHD, 2000, p. 2-42). Similarly, the NRC research review argued that "intensity of nstruction should be matched to children's needs" in acquiring phonological skills (Snow, Burns, & Griffin, 1998, p. 321).

[18] Each comparison is a single instance of one treatment group being compared to one control group. Some studies included multiple comparisons (e.g., a single treatment group being compared to multiple comparison groups, or a single comparison group being compared to multiple treatment groups).

[19] Effect size (ES) = 0.53 for reading, 0.59 for spelling. Both results were statistically significant at $p < 0.05$. According to the NRP, an effect size of 0.20 is considered "small," 0.50 is considered "moderate," and 0.80 is considered "large" (2000, p. 2-Characterizations of meta-analysis results as small, moderate, or large in this paper are based on rounding to the nearest of these values.

[20] ES = 0.53 on immediate posttests (90 comparisons), 0.45 on first follow-up posttests (35 comparisons), and 0.23 on second follow-up posttests (8 comparisons). All of these results were statistically significant at $p < 0.05$.

[21] On immediate-reading posttests, ES = 0.41 for classroom teachers (22 comparisons) and 0.64 for researchers and others (68 comparisons). On follow-up reading posttests, ES = 0.32 for classroom teachers (12 comparisons) and 0.63 for researchers and others (23 comparisons). On immediate-spelling posttests when reading-disabled comparisons were removed from the analysis, ES = 0.74 for classroom teachers (8 comparisons) and 0.96 for researchers and others (20 comparisons). All of these results were statistically significant at $p < 0.05$. (The NRP found that of the groups they analyzed, PA instruction did not have a statistically significant impact on spelling outcomes for reading-disabled students. Results were therefore reported separately by the NRP after excluding reading disabled comparisons. Unless otherwise stated, PA research results in this paper related to spelling do not include reading-disabled comparisons. Additionally, results in some categories for both reading and spelling were reported by the NRP separately for immediate posttests and follow-up posttests, while other results were reported for immediate posttests only. In cases where both immediate posttests and follow-up posttests were reported, both sets of results are included in this paper.)

[22] Average correlations for predicting decoding by precursor literacy skill: Alphabet knowledge, 0.50 (52 studies); phonological awareness, 0.40 (69 studies); phonological short-term memory, 0.26 (33 studies); rapid automatic naming letters and digits, 0.40 (12 studies); rapid automatic naming objects and colors, 0.32 (16 studies); writing or writing name, 0.49 (10 studies). Average correlations for predicting reading

comprehension by precursor literacy skill: Alphabet knowledge, 0.48 (17 studies); phonological awareness, 0.44 (20 studies); phonological short-term memory, 0.39 (13 studies); rapid automatic naming letters and digits, 0.43 (3 studies); rapid automatic naming objects and colors, 0.42 (6 studies); writing or writing name, 0.33 (4 studies).

[23] ES = 0.47 on immediate posttests (46 comparisons), 0.30 on follow-up posttests (12 comparisons). Both results were statistically significant at $p < 0.05$.

[24] ES = 0.86 on immediate posttests (27 comparisons), 1.33 on follow-up posttests (15 comparisons). Both results were statistically significant at $p < 0.05$.

[25] At-risk students who received 17 weeks of PA and letter knowledge instruction during their kindergarten year significantly outperformed untrained at-risk students in letter knowledge ($d = .67$, $F(1, 78) = 15.4$, $p < .01$), phoneme deletion ($d = .47$, $F(1, 78) = 4.7$, $p < .05$), and phoneme identification ($d = .54$, $F(1, 78) = 6.6$, $p < .05$) at the beginning of grade 1 (p. 664), and "significantly outperformed the at-risk controls on all measures of reading, with effect sizes in the range from .40 to .69" in tests at the beginning of grades 2 and 3 (p. 665; all effects were significant at $p < .01$ or $p < .05$). Even at the beginning of grade 7, "there were still significant effects" for oral-word reading efficiency ($d = .48$), oral-nonword-reading efficiency ($d = .53$) and phonological coding ($d = .49$) (p. 665; all effects were significant at $p < .05$). There was also a nonsignificant but positive trend at grade 7 in reading comprehension ($d = .49$), a trend that "was present in both accuracy and efficiency of reading comprehension" (p. 665). At-risk status was determined by having at least one parent with dyslexia.

[26] ES = 0.45 on immediate posttests (17 comparisons), 0.28 on follow-up posttests (8 comparisons). Both results were statistically significant at $p < 0.05$.

[27] ES = 1.25 on immediate posttests (7 comparisons), $p < 0.05$.

[28] ES = 0.48 on immediate posttests (40 comparisons), $p < 0.05$.

[29] ES = 0.49 on immediate posttests (25 comparisons), $p < 0.05$.

[30] ES = 0.49 on immediate posttests (18 comparisons), $p < 0.05$.

[31] ES = 0.45 on immediate posttests for low SES (11 comparisons), 0.84 for mid & high SES (29 comparisons). Both results were statistically significant at $p < 0.05$.

[32] For children learning to read in English, ES = 0.63 on immediate posttests (72 comparisons), 0.42 on follow-up posttests (17 comparisons). For children learning to read in a language other than English, ES = 0.36 on immediate posttests (18 comparisons), 0.47 on follow-up posttests (18 comparisons). All of these results were statistically significant at $p < 0.05$.

[33] Mean ES = .62 across studies for students participating in one-to-one tutoring programs with a heavy emphasis on phonics. This compares to a mean ES = .23 for students participating in program.ms with less emphasis on phonics.

[34] ES = 0.97 on immediate posttests (15 comparisons), $p < 0.05$.

[35] ES = 0.66 on immediate posttests (13 comparisons), $p < 0.05$.

[36] ES = 0.76 on immediate posttests (13 comparisons), $p < 0.05$.

[37] ES = 0.88 on immediate posttests (15 comparisons), $p < 0.05$.

[38] ES = 0.76 on immediate posttests for low SES (6 comparisons), 1.17 for mid and high SES (9 comparisons). Both results were statistically significant at $p < 0.05$. (These statistics include reading disabled comparisons. SES results were not reported separately with reading disabled comparisons removed.)

[39] For children learning to spell in English, ES = 0.95 on immediate posttests (22 comparisons). For children learning to spell in a language other than English, ES = 0.51 on immediate posttests (6 comparisons). Both results were statistically significant at $p < 0.05$.

[40] For reading on immediate posttests, ES = 0.67 for programs that used letters (48comparisons), v. 0.38 for programs that did not use letters (42 comparisons). On follow-up posttests, ES = 0.59 for programs that used letters (16 comparisons), v. 0.36 for programs that did not use letters (19 comparisons). For spelling on immediate posttests, ES = 1.00 for programs that used letters (17 comparisons), v. 0.57 for programs that did not use letters (11 comparisons). All of these ES comparisons were significantly different in favor of programs that use letters at $p < 0.05$.

[41] A confirmatory structural analysis using linear structured relations (LISREL) was conducted on assessments administered in May/June of kindergarten (Time 1) and March of grade 1 (Time 2), producing a factor loading score for each of eight PA assessments carried out during the Time 1 administration (four of which were also repeated at Time 2). The analysis also included an Early Reading Test at Time 1 and a spelling test and two portions of the Three-Minute Test (a standardized word reading test) at Time 2. The highest loading factor among Time 1 PA tests was for phoneme segmentation (.91), followed by phoneme recognition (.78), one of two phoneme counting measures (.72), phoneme blending (.70), the second of two phoneme counting measures (.57), phoneme deletion (.50), rhyme judgment (.49), and pseudoword repetition (.40) (p. 206). Analysis also showed a single common factor underlying PA scores, which "is closely related to literacy performance" (p. 209).

[42] "Averaged over reading and spelling, maximum specificity of maximum sensitivity was 46% for Phoneme Segmentation and 47% for Phoneme Recognition. Conversely, choosing 80% as the desired level of specificity, the average sensitivity was found to be 45% for Phoneme Recognition whereas Phoneme Segmentation did not even attain an 80% level of specificity. Maximum Phoneme Segmentation specificity averaged over the three literacy measures was 65%, associated with 77% sensitivity (cf. 75% sensitivity at the same specificity level for Phoneme Recognition). This shows that both the Phoneme Segmentation and Phoneme Recognition Tests tend to identify too many children at kindergarten as running the risk of meeting with literacy problems in Grade 1 and that Phoneme Recognition is not inferior to Phoneme Segmentation in that respect" (p. 213).

Phonics and Word Recognition

Phonics instruction teaches children the relationship between letters (graphemes) and the sounds in spoken language (phonemes), and how to apply that knowledge in reading and spelling words.

Phonics instruction builds on phonemic awareness. Although it includes some types of phonemic awareness activities, in which students "use grapheme-phoneme correspondences to decode or spell words," it extends beyond such tasks to "include other activities such as reading decodable text or writing stories" (NICHHD, 2000, p. 2-11).

Research recommendations favor phonics instruction that is "systematic and explicit." An explicit approach includes specific directions to teachers for teaching letter-sound correspondences. A systematic approach is one that incorporates a planned, sequential set of phonetic elements to master. These elements are explicitly and systematically introduced in meaningful reading and writing tasks.

Systematic and explicit phonics instruction includes teaching a full spectrum of key letter-sound correspondences: not just major correspondences between consonant letters and sounds, but also short and long vowel letters and sounds, and vowel and consonant digraphs such as oi, ea, ou, sh, and th.

Several different methods have been developed to teach phonics systematically and explicitly, including synthetic phonics, analytic phonics, embedded phonics, analogy phonics, onset-rime phonics, and phonics through spelling. Broadly speaking, these approaches are all effective (NICHHD, 2000, p. 2-89).

Phonics instruction leads to an understanding of the alphabetic principle–the set of systematic and predictable relationships between written letters and spoken sounds. For children to learn how to sound out word segments and blend these parts to form recognizable words, they must know how letters correspond to sounds.

- Phonics instruction has a positive overall effect on reading. A meta-analysis by the National Reading Panel (NRP) found that systematic and explicit phonics instruction had a significantly stronger effect on children's reading than every category of nonsystematic or non-phonics instruction that was studied. This was true whether nonsystematic or non-phonics instruction occurred in the context of "basal programs, regular curriculum, whole language approaches, whole word programs, [or] miscellaneous programs" (NICHHD, 2000, pp. 2-95, 2-160).[43] Similarly, a review of research on early childhood reading commissioned by the National Research Council (NRC) cited a research finding that "children taught via the direct code approach" (i.e., systematic and explicit phonics instruction) showed better reading gains than students receiving whole-language or embedded phonics instruction (Snow, Burns, & Griffin, 1998, p. 205, citing Foorman et al., 1998).
- Phonics instruction has positive overall effects on specific skill areas. The NRP metaanalysis found that across grades K-6, phonics instruction was "most effective in improving children's ability to decode regularly spelled words . . . and pseudowords," but also helped students to read miscellaneous words (some of which were irregularly spelled) and read text orally (NICHHD, 2000, pp. 2-94, 2-159). Phonics instruction positively impacted spelling and text comprehension for kindergarten and first-grade students, but not for those in grades 2-6 (NICHHD, 2000, p. 2-159).[44]
- Phonics instruction has a lasting impact on reading. Follow-up tests in the NRP meta-analysis found that the effects of phonics instruction were reduced, but still significant, several months after the instruction ended, "indicating that the impact of phonics instruction lasted well beyond the end of training" (NICHHD, 2000, pp. 2-113, 2-159, 2-161).[45]

Grade levels

The NRP meta-analysis found that:

- Kindergarten and first-grade students experienced significantly better improvement from phonics instruction than from other types of instruction in all six areas measured (decoding regular words, decoding pseudowords, reading miscellaneous words, spelling, reading text orally, and comprehending text), with a moderate to large effect size for all areas except reading text orally (NICHHD, 2000, p. 2-159). Overall levels of achievement were very similar for kindergartners and first-graders.[46]
- Grades 2–6 students (the majority of which were disabled readers) also experienced significantly better improvement from phonics instruction in four out of six areas (decoding regular words, decoding pseudowords, reading miscellaneous words, and reading text orally), with effect sizes for the various areas ranging from small to moderate (NICHHD, 2000, p. 2-159).[47]

A meta-analysis of 97 studies investigating the effects of reading interventions for struggling readers revealed that "almost all successful programs have a strong emphasis on phonics" (Slavin, Lake, Davis, and Madden, 2011, p 19). For example, one-to-one tutoring models that focus on phonics obtain much better outcomes than programs that do not emphasize phonics (Slavin et.al., 2011).[48]

One of the major findings of the National Literacy Panel's report, Developing Literacy in Second Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth, indicates, "Instruction that provides substantial coverage in the key components of reading—identified by the National Reading Panel (NICHD, 2000) as phonemic awareness, phonics, fluency, vocabulary, and text comprehension—has clear benefits for language-minority students (National Literacy Panel, 2006, p 3). For instance, research has demonstrated that phonics instruction enhances the reading and writing skills of children for whom English is a second language, and the positive effects remain a year later (Stuart, 1999; Stuart, 2004).[49]

Student categories

Phonics instruction has been shown to have a statistically significant positive impact across many student categories (NICHHD, 2000, p. 2-160):

- Kindergartners at risk of developing future reading problems[50]
- First-graders at risk[51]
- First-grade normally achieving readers[52]
- Second through sixth grade normally achieving readers[53]
- Second through sixth graders identified as disabled readers[54]
- Children across various SES (socioeconomic status) levels[55]

Range and scope of instruction

- Grade level. The NRP finding that phonics instruction benefited students in kindergarten, grade 1, and grades 2–6 (the majority of which were disabled readers) suggests a value to including phonics instruction at the kindergarten and first-grade levels and beyond, particularly for disabled readers.
- Level at which phonics instruction begins. The NRP meta-analysis found that phonics instruction in kindergarten and first grade was "much more effective" than phonics instruction that began in second grade or later, after students have learned to read independently (NICHHD, 2000, p. 2-93, emphasis added).
- Letter knowledge as precursor. Two developmental studies, drawing on and extending a body of existing research, suggest that knowledge of letter names and/or letter sounds is an important precursor to the earliest stages of reading knowledge. Muter et al. (2004) found that students' ability to identify letter sounds and/or names on entering schooling (average age 4 years, 9 months) was one of two significant predictors, together with phoneme sensitivity, of word recognition

ability a year later (pp. 671–672).[56] Similarly, word recognition ability the following year (two years after the first set of tests) was significantly predicted by the three factors of earlier word recognition, letter knowledge, and phoneme sensitivity.[57]

- In another study involving five assessment rounds spread across kindergarten and first grade, Morris et al. (2003) determined that alphabet knowledge, defined as the ability to name 15 uppercase and lowercase letters, was the first of seven sets of tested reading-related skills to develop chronologically58.
- These findings suggest a possible value for the common practice of explicitly teaching letter names and sounds to students early in kindergarten. One note of caution: these findings are not based on research comparisons of a group of students exposed to such instruction and a similar group of students not so exposed. Thus, a causal link between teaching letter names and sounds to students early in kindergarten and later development of reading skills has not been firmly established from this research.
- Instruction over multiple years. Results of a few multi-year studies examined by the NRP "suggest that when phonics instruction is taught to children at the outset of learning to read and continued for 2 to 3 years, the children experience significantly greater growth in reading at the end of training than children who receive phonics instruction for only 1 year after 1st grade" (NICHHD, 2000, p. 2-118).[59]

Instructional methods and features

- Varieties of effective programs. The NRP meta-analysis found small to moderate statistically significant effects that "did not differ statistically from each other" (NICHHD, 2000, p. 2-93) for several types of systematic and explicit phonics instructional programs. Included among these were "Synthetic phonics programs which emphasized teaching students to convert letters into sounds and then to blend the sounds to form recognizable words" (NICHHD 2000, pp. 2-93, 2-160).[60]
- Spelling instruction. An analysis of research commissioned by the NRC claimed that spelling instruction, in particular at the 2nd grade level, is important in building "phonemic awareness and knowledge of basic letter-sound correspondences" (Snow, Burns, & Griffin, 1998, p. 212).
- Phonics instruction as means to an end. Based on their interpretation of the research results, the NRP argued that phonics instruction (i.e., "the teaching of letter-sound relations") should not be pursued as an end in itself, but should be directed toward the goal of helping students in their "daily reading and writing activities" (NICHHD, 2000, p. 2-96). Students should understand that this is the goal of learning letter-sounds, and should have practice in putting their skills to use.
- Part of an integrated reading program. Based on their interpretation of the research results, the NRP argued that phonics instruction "should be integrated with other reading instruction to create a balanced reading program" including vocabulary and literature (NICHHD, 2000, p. 2-97). Phonics "should not become the dominant component in a reading program, neither in the amount of time devoted to it nor in the significance attached" (NICHHD, 2000, p. 2-97).
- Variable, guided by assessment. Based on their interpretation of the research results, the NRP argued that, ideally, phonics instruction should be variable based on the needs of individual students as determined through assessment (NICHHD, 2000, pp. 2-96, 2-97). Similarly, the NRC research review argued that "intensity of instruction should be matched to children's needs" in applying explicit instruction on the connection between phonemes and spellings (Snow, Burns, & Griffin, 1998, p. 321).

[43] ES = 0.46 v. basal programs (10 comparisons), 0.41 v. regular curriculum (16 comparisons), 0.31 v. whole language (12 comparisons), 0.51 v. whole word programs (10 comparisons), and 0.46 v. miscellaneous programs (14 comparisons); all differences were significant at $p < 0.05$. Note that these categories included only instructional programs that did not feature explicit, systematic phonics instruction. For example, a basal program that included systematic and explicit phonics instruction would not be included in the category of "basal programs" as defined here.

[44] Across grades K–6, ES = 0.67 for decoding regular words (30 comparisons), 0.60 for decoding pseudowords (40 comparisons), 0.40 for reading miscellaneous words (59 comparisons), 0.25 for reading text orally (16 comparisons), 0.35 for spelling words (37 comparisons), and 0.27 for comprehending text (35 comparisons). All of these results were statistically significant at $p < 0.05$. However, in separate analyses for grades K–1 and 2–6, results for spelling and comprehending text were found to be statistically significant at $p < 0.05$ for grades K–1 but not for grades 2–6. (For ES data from these separate grade range analyses, see footnote 24 for grades K–1 and footnote 25 for grades 2–6.)

[45] In six studies, the experimental and control groups were tested at the end of training and again "after a delay following training to assess long-term effects" (2000, p. 2-110). ES = 0.51 for testing at the end of training and ES = 0.27 for follow-up testing. In both cases, the results were statistically significant at $p < 0.05$. However, the two effect sizes did not significantly differ from one another at $p < 0.05$.

[46] For K–1 combined, ES = 0.98 for decoding regular words (8 comparisons), 0.67 for decoding pseudowords (14 comparisons), 0.45 for reading miscellaneous words (23 comparisons), 0.23 for reading text orally (6 comparisons), 0.67 for spelling words (13 comparisons), and 0.51 for comprehending text (11 comparisons). ES for all measures together = 0.56 for kindergartners (7 comparisons), 0.54 for first graders (23 comparisons). All of these results were statistically significant at $p < 0.05$. Results were not reported separately for kindergartners and first graders for the six areas measured. The relatively small number of studies at the kindergarten level is partly the result of studies that were incorporated by the NRP into the meta-analysis on phonemic awareness (PA), which were therefore excluded from the phonics meta-analysis. The NRP notes that taking the PA studies measuring reading outcomes into account, "Combined, these findings clearly support the importance of teaching phonemic awareness and grade-appropriate phonics in kindergarten" (NICHHD, 2000, p. 2-115)

[47] ES = 0.49 for decoding regular words (17 comparisons), 0.52 for decoding pseudowords (13comparisons), 0.33 for reading miscellaneous words (23 comparisons), and 0.24 for reading text orally (6 comparisons). All of these results were statistically significant at $p < 0.05$.

[48] Mean ES = .62 across studies for students participating in one-to-one tutoring programs with a heavy emphasis on phonics. This compares to a mean ES = .23 for students participating in programs with less emphasis on phonics.

[49] This study represents a follow-up from the previous study (1999) investigating the effectiveness of phoneme awareness and phonics teaching as an introduction to reading for ESL students. When compared to students utilizing a more holistic approach, students receiving 12 weeks of phoneme awareness and phonics teaching exhibited significantly higher scores on tests of initial phoneme identification, phoneme segmentation, letter-sound recognition, and recall, word and non-word reading, and dictation. Post-tests were administered 18 months after the end of intervention. The 2004 study sought to determine whether these gains had been retained in the long term, 30 months post intervention. Findings were significant for phoneme segmentation, $F(2, 98) = 27.48$, $p < .0001$; letter-sound recall, $F(2, 98) = 30.9$, $p < .0001$, non-word reading, $F(2, 98) = 8.66$, $p < .0001$, and in spelling $F(2. 98) = 6.65$, $P < .002$.

[50] ES = 0.58 (6 comparisons), $p < 0.05$. Results were not reported separately for kindergarten students not at risk.

[51] ES = 0.74 (9 comparisons), $p < 0.05$.

[52] ES = 0.48 (14 comparisons), $p < 0.05$.

[53] ES = 0.27 (7 comparisons), $p < 0.05$.

[54] ES = 0.32 (17 comparisons), $p < 0.05$.

[55] ES = 0.66 for low SES (6 comparisons), 0.44 for middle SES (10 comparisons), 0.37 where the SES was varied (14 comparisons), and 0.43 where the SES was not given (32 comparisons); $p < 0.05$ for all results.

[56] Standardized path coefficient for the effect of letter knowledge on word recognition = .63, based on a path analysis of factors from all three sets of tests. Chi square (24, N=90) = 28.80, not significant, comparative fit index = 0.988, goodness of fit index = 0.941, root mean square error of approximation = 0.049 (90% confidence interval = 0.000 to 0.102) (p. 674).

[57] Standardized path coefficient for the effect of letter knowledge on word recognition = .22, based on a path analysis of factors predicting word recognition in the third set of assessments from factors in the second set of assessments. Chi square (2, N=90) = 0.64, not significant, comparative fit index = 1.00, goodness of fit index = 0.998, root mean square error of approximation = 0.000 (90% confidence interval = 0.000 to 0.149) (p. 674).

[58] Structural equation modeling found that alphabet knowledge preceded beginning consonant awareness (standardized path coefficient of .42, $p < .05$), which in turn preceded concept of word in text and spelling with beginning and ending consonants. These two factors in turn preceded phoneme segmentation, which preceded word recognition, which preceded contextual reading. Chi square (12df) = 44.23, goodness of fit index = .90, normed chi square = 3.69, comparative fit index = .90 (pp. 315316). All of the standardized path coefficients were significant at $p < .05$.

[59] ES = 0.43 at the end of second grade for students who had received 2–3 years of phonics instruction (4 comparisons), v. 0.27 for "older children receiving only 1 year of phonics instruction in grades beyond 1st" (p. 2-118; number of comparisons not given). Because of the small number of comparisons, the results are described as "mainly suggestive" (p. 2-118).

[60] ES = 0.45 overall for synthetic programs (39 comparisons). Among specific groups taught using synthetic programs, ES = 0.64 for kindergartners and first-graders at risk of developing future reading problems (9 comparisons), 0.54 for first-grade normally achieving readers (8 comparisons), 0.27 for second through sixth grade normally achieving readers (6 comparisons), and 0.36 for disabled readers (9 comparisons). All of these results are significant at $p < 0.05$.

Fluency

Fluency is the ability to read text quickly, accurately, and with expression. It provides a bridge between word recognition and comprehension. Fluency includes word recognition, but extends beyond knowledge of individual words to reflect the meaningful connections among words in a phrase or sentence. Fluent readers are able to recognize words and comprehend them simultaneously.

Fluency is widely acknowledged to be a critical component of skilled reading. A study conducted by the National Assessment of Educational Progress (NAEP) found a "close relationship between fluency and reading comprehension" (NICHHD, 2000, p. 3-1, citing Pinnell et al., 1995). More generally, a National Research Council report stated that "adequate progress in learning to read English beyond the initial level depends on . . . sufficient practice in reading to achieve fluency with different kinds of texts written for different purposes" (Snow, Burns, & Griffin, 1998, p. 223). Additional evidence of this link between fluency and the development of general reading ability, particularly reading comprehension, is provided by several studies that found student performance on fluency assessments was an effective predictor of their performance on other types of reading measures.[61]

It is generally agreed that fluency results from reading practice. However, approaches to developing fluency have ranged from simply encouraging independent reading to more structured approaches to oral reading practice, designed to guide students toward developing specific fluency skills (e.g., reading with expression). In reviewing the research on fluency instruction, the National Reading Panel (NRP) found value in approaches that incorporated repeated oral reading, guided or unguided, as opposed to less focused attempts to encourage reading in general.

- Repeated oral reading instruction has a positive overall effect on reading. A meta-analysis by the NRP found that fluency instruction in the form of repeated oral reading (guided or unguided) "had a consistent, and positive impact on word recognition, fluency, and comprehension as measured by a variety of test instruments and at a range of grade levels" (NICHHD, 2000, p. 3-3). The weighted average of these effect sizes resulted in a moderate effect on student reading (NICHHD, 2000, p. 3-16).[62]
- Repeated oral reading instruction has a positive impact on specific skill areas. The NRP meta-analysis found that repeated oral reading had a moderate effect on reading accuracy, a somewhat less strong effect on reading fluency, and a smaller effect on reading comprehension (NICHHD, 2000, pp. 3-3, 3-18).[63]
- In contrast, encouraging children to read on their own has no research-verified impact on reading achievement. The NRP reviewed research studies on attempts to build fluency through encouraging independent student reading; most of these were studies of sustained silent reading. It found that the body of research failed to confirm any positive effects (NICHHD, 2000, pp. 3-3, 3-24–3-26, citing 14 studies).[64]

Analysis of grade levels covered by the studies in the NRP meta-analysis led to the conclusion that "repeated reading procedures have a clear impact" on reading ability among

- "Nonimpaired readers at least through grade 4"
- "Students with various kinds of reading problems throughout high school" (NICHHD, 2000, p. 3-17)

Range and scope of instruction

- Grade level. The NRP research findings suggest a value to including fluency instruction in the form of repeated oral reading procedures at least through the fourth grade level, and possibly beyond in

a supporting capacity for students with reading problems. A review of research on early childhood reading commissioned by the National Research Council (NRC) identified fluency instruction as a key component of first-1st grade instruction and argued that "throughout the early grades, time, materials, and resources should be provided" for both daily independent reading and daily supported reading and rereading (Snow, Burns, & Griffin, 1998, p. 195). However, the NRC did not cite specific studies as the basis for recommending that such activities occur daily.

Instructional methods and features

- Effective methods. Small sample sizes in studies reviewed by the NRP made it impossible to compare the effectiveness of different methods that fell within the category of repeated (guided or unguided) oral reading. However, some of the methods that produced "clear improvement" (NICHHD, 2000, p. 3-15) included the following:

Repeated readings (set number of repetitions, set amount of time, or until fluency criteria were reached) (NICHHD, 2000, p. 3-15, citing 9 studies)[65] Repeated readings "combined with other [guiding] procedures such as a particular type of oral reading feedback . . . or phrasing support for the reader" (NICHHD, 2000, p. 3-15, citing 2 studies)[66]

Practice of oral reading "while listening to the text being read simultaneously" (NICHHD, 2000, p. 3-15, citing 3 studies)[67]

- Oral reading practice. In the NRP's description of effective repeated oral reading programs, the NRP stated that many of these programs provided increased oral reading practice "through the use of one-to-one instruction, tutors, audiotapes, peer guidance, or other means," compared to earlier approaches (NICHHD, 2000, p. 3-11).
- Incorporation of independent reading. The report commissioned by the NRC identified independent reading, whether silent or spoken, as a key strategy for helping students develop fluency. Such reading requires that students read texts at the appropriate instructional level, neither too easy nor too difficult (i.e. at the instructional level) (Snow, Burns, & Griffin, 1998, p. 213). In light of the NRP research results, this recommendation should be considered not as an alternative to repeated oral reading, but as a supplement to it.
- Part of a larger reading program context. According to the NRP, in all of the programs reviewed, "the fluency work was only part of the instruction that students received" (NICHHD, 2000, p. 3-20). They cited a study cautioning against too much focus on fluency issues as a potential distraction from reading comprehension, then concluded that repeated oral reading should occur "in the context of an overall reading program, not as stand-alone interventions" (NICHHD, 2000, p. 320, citing Anderson, Wilkinson, & Mason, 1991).
- Regular assessment. Based on the research, the NRP recommended that "teachers should assess fluency regularly," using both formal and informal methods (NICHHD, 2000, p. 3-4). Such informal methods can include "reading inventories . . . miscue analysis . . . pausing indices . . . running records . . . and reading speed calculations" (NICHHD, 2000, p. 3-9, citing 5 studies).[68] Similarly, the NRC report recommended that "because the ability to obtain meaning from print depends so strongly on the development of . . . reading fluency," fluency "should be regularly assessed in the classroom, permitting timely and effective instructional response" (Snow, Burns, & Griffin, 1998, p. 323).
- Validity of oral reading fluency measures. According to Hasbrouck and Tindal (2006), measuring student oral reading fluency in terms of words correct per minute "has been shown, in both theoretical and empirical research, to serve as an accurate and powerful indicator of overall reading competence, especially in its correlation with comprehension. The validity and reliability of these measures has been well established in a body of research extending over the past 25 years" (citing Fuchs, Fuchs, Hosp, & Jenkins, 2001; Shinn, 1998). For example, Fuchs et al. (2001) summarized research showing that measures of oral reading fluency involving text passages that were several paragraphs in length corresponded well with "traditional, commercial, widely used tests of reading comprehension" (p. 243), and were superior in this regard to reading words from a list,[69] measures

of silent fluency,[70] and more direct measures of reading comprehension.[71]
More specifically, several studies have shown that third-grade tests of oral reading fluency from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) correlated well to high-stakes reading assessments from Arizona,[72] Colorado,[73] Florida,[74] North Carolina,[75] and Oregon.[76]

- Oral reading fluency norms. Based on analysis of assessment data from a pool ranging from approximately 3,500 to over 20,000 students collected between 2000 and 2005, Hasbrouck and Tindal (2006) have developed a new set of oral reading fluency norms to replace the widely used norms that were published in 1992 (Hasbrouck & Tindal, 1992). The new norms "align closely with both those published in 1992, and also closely match the widely used DIBELS norms . . . and those developed by Edformation with their AIMSweb system . . . with few exceptions." These new norms cover grades 1–8 and provide information for 90th, 75th, 50th, 25th, and 10th percentile rankings. The researchers also provided specific norm-related recommendations for using oral reading results for screening, diagnosis, and monitoring student progress:
- Screening. According to the authors, "fluency-based assessments have been proven to be efficient, reliable, and valid indicators of reading proficiency when used as screening measures" (citing Fuchs et al., 2001; Good, Simmons, & Kame'enui, 2001).

For screening in grades 2–8, the authors recommended that "a score falling within 10 words above or below the 50th percentile should be interpreted as within the normal, expected, and appropriate range for a student at that grade level at that time of year."

For screening in grade 1, the authors recommended following guidelines established by Good et al. (2002) that identified students reading at or above 40 words correct per minute (wcpm) by the end of the school year as being "at low risk of reading difficulty," students reading at 20–40 wcpm as being "at some risk," and students reading below 20 wcpm as being "at high risk of failure."

[61] Barger, 2003; Buck & Torgesen, 2003; Fuchs, Fuchs, Eaton, & Hamlett, 2000; Fuchs, Fuchs, Hosp, & Jenkins, 2001; Fuchs, Fuchs, & Maxwell, 1988; Good, Simmons, & Kame'enui, 2001; Jenkins, Fuchs, van den Broek, Espin, & Deno, 2003; Shaw & Shaw, 2002; Wilson, 2005. For additional information on results of these studies, see below under Validity of oral reading fluency measures.

[62] Weighted ES = 0.41, based on 14 studies incorporating 99 comparisons. Weighting reflected the number of subjects per study (i.e., studies with larger numbers of subjects weighted more than studies with smaller numbers of subjects). The NRP meta-analysis for fluency did not report statistical significance or p-values.

[63] Weighted ES = 0.55 for word recognition (11 comparisons from 8 studies), 0.44 for fluency (35 comparisons from 10 studies), and 0.35 for comprehension (49 comparisons from 12 studies).

[64] Evans & Towner, 1975; Reutzel & Hollingsworth, 1991a; Collins, 1980; Langford & Allen, 1983; Cline & Kretke, 1980; Davis, 1988; Holt & O'Tuel, 1989; Burley, 1980; Summers & McClelland, 1982; Manning & Manning, 1984; Morrow & Weinstein, 1986; Peak & Dewalt, 1994; Vollands, Topping, & Evans, 1999; Carver & Leibert, 1995. These studies were not considered to be of sufficiently high quality and quantity to conduct a meta-analysis.

[65] Faulkner & Levy, 1999; Levy, Nicholls, & Kohen, 1993; Neill, 1979; O'Shea, Sindelar, & O'Shea, 1985; Rasinski, 1990; Sindelar, Monda, & O'Shea, 1990; Stoddard, Valcante, Sindelar, O'Shea, & Algozzine, 1993; Turpie & Paratore, 1995; VanWagenen, Williams, & McLaughlin, 1994..

[66] Reitsma, 1998; Taylor, Wade, & Yekovich, 1985.

[67] van Bon, Boksebeld, Font Freide, & van den Hurk, 1991; Rasinski, 1990; Smith, 1979.

[68] Johnson, Kress, & Pikulski, 1987; Goodman & Burke, 1972; Pinnell et al., 1995; Clay, 1972; Hasbrouck & Tindal, 1992.

[69] Jenkins, Fuchs, van den Broek, Espin, & Deno (2003) compared measures of oral reading fluency of (a) connected text (a folktale) and (b) a context-free word list (list of words from the folktale) to performance on the Iowa Test of Basic Skills (ITBS) subtest for reading comprehension for 113 fourth- graders. They found that speed of oral reading from the folktale correlated more strongly to the ITBS score than did speed of oral reading from the word list (criterion validity coefficients of .83 and .54, respectively; the difference was statistically significant, $t(110) = 7.86$, $p < .001$) (p. 723).

[70] Fuchs, Fuchs, Eaton, & Hamlett (2000) compared measures of oral and silent reading speed with "the number of questions answered correctly on the passages that had been read" and with the raw score on the Iowa Test of Basic Skills (ITBS) subtest for reading comprehension (Fuchs et al., 2001, p. 247, summarizing Fuchs et al., 2000). They found that "for For silent reading, the correlation with the questions answered on the passage was .38, and with the Iowa test, it was .47. For oral reading, the correlation with the passage questions was .84, and with the Iowa test, it was .80. So, correlations for the oral reading fluency score were substantially and statistically significantly higher than for the silent reading fluency scores" (Fuchs et al., 2001, p. 247; p- values not reported).

[71] Fuchs, Fuchs, & Maxwell (1988) compared measures of oral reading fluency, short-answer question answering, passage recall, and cloze (all based on the same 400-word passages) with the Reading Comprehension subtest of the Stanford Achievement Test for 70 middle school and junior high school students with reading disabilities. They found that criterion validity coefficients (average correlations across the different scoring methods) for the question answering, the recall, and the cloze measures were .82, .70, and .72, respectively. The coefficient for oral reading fluency was .91. Tests for differences between these correlations demonstrated that the correlation for oral reading fluency was significantly higher than the correlation for each of the three direct measures of reading comprehension" (Fuchs et al., 2001, p. 244, summarizing Fuchs et al., 1988; p-values not reported). Additionally, according to Fuchs et al. (2001), "high correlations have also been documented for nondisabled elementary school age children within a variety of studies that (a) incorporated different criterion measures of reading accomplishment, (b) examined within-grade as well as across-grade coefficients, and (c) used instructional level as well as a fixed level of text across students" (p. 245, citing as research reviews Hosp & Fuchs, 2000; Marston, 1989).

[72] "The correlation between [Arizona Instrument to Measure Standards] and [DIBELS oral reading fluency assessment] for the overall group was . . . $r = .741$," based on scores of 241 third- graders (Wilson, 2005; p-value not reported).

[73] The DIBELS oral reading fluency assessment was administered three times: in fall, winter, and spring. The fall and winter administrations each had a correlation coefficient of .73 with the spring assessment of the Colorado State Assessment Program (CSAP). The spring administration of DIBELS oral reading fluency assessment had a correlation of .80 with CSAP (Shaw & Shaw, 2002; p-values not reported). Each correlation was based on the scores of more than 50 third-graders.

[74] "There was a significant correlation between [DIBELS oral reading fluency] scores and reading [Florida Comprehensive Assessment Test–Sunshine State Standards] scores ($r = .70$, $p < .001$) . . . and reading scores on the [Florida Comprehensive Assessment Tests norm-referenced test] ($r = .74$, $p < .001$)," based on scores of 1,102 third- grade students (Buck & Torgesen, 2003).

[75] "The correlation between [DIBELS oral reading fluency] Spring scores and [North Carolina] End of Grade reading scores was . . . $r = .73$," based on scores of 38 third-grade students (Barger, 2003; no p-value reported).

[76] The correlation coefficient between DIBELS oral reading fluency assessment and the Oregon Statewide Assessment was .67 (45% of variance explained, $p < .001$), based on the scores of 364 third- graders (Good, Simmons, & Kame'enui, 2001, p. 275.

Standard: Writing

What are the processes involved in writing?

At the most basic level, writing by definition is the translation of thought into visual form; however, the process of writing is remarkably complex. The act of writing is rarely linear and requires the iteration of planning, drafting, and revising while simultaneously employing critical thinking skills to analyze, summarize, and evaluate. Writing is a language-based activity that naturally overlaps with other processes included elsewhere in the *Standards*, such as reading, expressive language, receptive language, vocabulary use, and writing mechanics.

Graham & Perin (2007) in their meta-analysis of research on writing instruction, identified 11 key elements for writing instruction:

1. Writing strategies, including planning revising, and editing;[77]
2. Summarization, which includes explicit and systematic teaching[78]
3. Collaborative writing, where students work together to plan, draft, revise, and edit[79]
4. Specific product goals[80]
5. Word processing, using computers and word processors as supports[81]
6. Sentence combining, where students are taught to construct complex sentences[82]
7. Prewriting, which assists students in generating and organizing ideas[83]
8. Inquiry activities, where students analyze concrete data to help develop ideas and content[84]
9. Process writing approach, which utilizes a workshop environment stressing extended writing opportunities, authentic writing, personalized instruction, and cycles[85]
10. Study of models, which allows student to read, analyze, and emulate good writing[86]
11. Writing for content learning, which uses writing as a tool for learning content mateiral. (p. 4 – 5).[87]

Writing is a central form of communication. It requires a deep knowledge of subject matter and employs critical thinking skills. As students transition to high school and college, writing becomes one of the primary methods by which their work is judged.

When students increase their knowledge about writing processes, they become better writers. It has been demonstrated that students' knowledge of discourse writing—that is, knowledge about various genres of and schemas for writing, coupled with linguistic knowledge (e.g., grammar, procedures for constructing sentences, spelling)—are factors that uniquely contribute to student variation in writing performance. Olinghouse and Graham (2009) found the following five types of discourse knowledge significantly contribute to story writing quality, length, and vocabulary diversity:

- Substantive processes (role of process in good writing and carrying out the writing process;
- Production procedures (role of linguistic and mechanical factors in good writing, story writing, and carrying out the writing process);
- Motivation (role of effort in good writing and carrying out the writing process);
- Story elements (basic structural elements in a story);
- Irrelevant information (p 47). [88]

In their meta-analysis examining the effects of various writing practices on reading performance, Graham and Herbert (2010) found that when students write about text, are explicitly taught writing skills and processes, and increase the amount of time spent writing, students demonstrate greater text comprehension.

In Writing Next, the majority of research articles reviewed in Graham & Perin's (2007) meta-analysis included students across the full range of normal classroom variation. The 11 key elements of writing instruction were found to benefit a wide variety of learners. Students who struggle with foundational writing

skills, for example, ESL students or students with a disability, may benefit from direct, targeted instruction. For example, a study conducted by Saddler & Graham (2005) indicated that when provided with direct instruction designed to foster sentence-combining skills, fourth-grade students who were considered less skilled in writing improved their story writing and revising skills.[89] Graham & Perin's (2007) meta-analysis indicated that writing strategy instruction was found particularly effective for low-achieving students[90] (11 studies).

Range and scope of Instruction:

Young children are naturally inclined to express ideas in print, primarily through illustration. Writing instruction typically begins informally in preschool, as children begin to master basic concepts of print and letter formation, and becomes more sophisticated as children move into Kindergarten and beyond. Pearson (1994) indicates that the "synergistic" relationship between reading and writing renders it critical to begin writing instruction in the early grades.

Instructional Methods and Features:

Graham & Harris (1994) advocate for an integrated approach by incorporating elements from direct skill instruction and the process-oriented methodology, including:

- Skill-oriented instruction designed to foster text production skills (e.g., spelling, phonemic awareness)
- Opportunities for children to engage in writing activities
- Frequent opportunities to apply specific skills in a variety of writing activities
- Peer review and collaboration

Writing practices demonstrated to increase students' reading comprehension skills, include the following:

- **Have students write about texts they read**. Write personal reactions, analyze and interpret text (9 studies)[91], write summaries (19 studies)[92], keep notes (23 studies)[93], and answer and create questions about text (8 studies[94]);
- **Teach students the writing skills and processes that create text**. Teach the process of writing, text structures for writing, paragraph (12 studies)[95] and sentence construction and spelling (4 studies)[96]; spelling (5 studies)[97]
- **Increase the frequency allocated for writing** (6 studies)98 (Graham & Herbert, 2010, p 11).

[77] ES = .82 (20 studies; 11 with low-achieving students, 9 with normal variation)

[78] ES = .82 (4 studies)

[79] ES = .75 (7 studies)

[80] ES = .70 (5 studies)

[81] ES = .55 (18 studies)

[82] ES = .50 (5 studies)

[83] ES = .32 (5 studies)

[84] ES = .32 (5 studies)

[85] ES = .32 (21 studies

[86] ES = .25 (6 studies)

[87] ES = .23 (26 studies)

[88] These five factors accounted for 14% ($p < .001$) of the variability in quality of writing, when selected variables (gender, grade, basic reading skills, handwriting fluency, spelling, written story plan, and attitude toward writing) were controlled.

[89] Students receiving instruction in sentence-combining were twice as likely as comparison students to product a correctly written sentence ($F(1, 39) = 31.3$, $MSE = 37.7$, $p = .00$. Findings were similar when sentence combining was assessed via researcher-designed progress monitoring assessments and using a norm-referenced measure of sentence combining.

[90] ES = 1.02 (11 studies).

[91] Peronal reactions. ES = .77 (9 studies)

[92] ES = .52 (19 studies)

[93] ES = .47 (23 studies)

[94] ES = .27 (8 studies

[95] ES = .18 (12 studies, published tests); ES = .27 (5 studies, researcher-created tests)

[96] ES = .79 (4 studies)

[97] ES = .68 (5 studies)

[98] ES = .30 (11 studies)

Standard: Speaking and Listening

Oral language includes critical skills that allow children to:

- Communicate-listen and respond when people are talking
- Understand the meaning of a large number of words and concepts that they hear or read
- Obtain new information about things they want to learn about, and
- Express their own ideas and thoughts using specific language (National Institute for Literacy)

Oral language is divided into two subtypes: receptive language and expressive language. Receptive language is language that is heard and understood. Children exhibit receptive language skills when they listen and comprehend stories, understand vocabulary, engage in social exchanges with peers, and follow directions. Expressive language is the generation of thoughts, ideas, and needs through verbal and visual form. Children exhibit expressive language skills when they retell a story, incorporate vocabulary, and engage in discussion. Woven into these processes are other linguistic features and cognitive abilities, such as vocabulary, grammar, auditory memory, sequencing, and phonological processing, among others. Receptive language skills develop earlier than expressive language skills.

Instruction in speaking and listening focus on the following skills and processes:

- Understanding of information by answering questions about key details or facts
- Engaging in collaborative discussions
- Representing ideas and thoughts in oral and written form, as well as through media
- Reporting on topics and relating stories that contain key details and are presented in a logical fashion
- Speaking in complete sentences and utilizing developmentally appropriate vocabulary
- Differentiating contexts that require formal English from contexts where informal exchange is acceptable
- Interpreting and use images, graphics and symbols, as found in media
- Demonstrating understanding by rephrasing, summarizing

There exists a complex interplay between speaking and listening skills and academic achievement. Speaking and listening are language-based processes that are prerequisites for reading and writing. Studies have shown that:

- Oral language skills, in conjunction with spelling and letter-writing fluency, are positively related to writing skills (Young-Suk, Otaiba, Puranik, & Folson, 2011)[99] and reading skills (Cooper, Roth, Speece, & Schatschneider 2002).[100]
- Expressive vocabulary knowledge and listening comprehension skills are related to word identification ability (Wise, Sevcik, Morris, Lovett, & Wolf, 2007, p. 1095).
- Receptive and expressive vocabulary knowledge are related to pre-reading skills (Wise, et.al, 2007)
- Expressive vocabulary and listening comprehension are related to word identification skills (Wise, et.al., 2007)[101]

Teachers are well aware that students embark upon their educational careers with varying degrees of development in their receptive and expressive language skills. Instruction at the Kindergarten and early elementary level includes engaging in shared discussions, learning to collaborate with peers, demonstrate understanding by answering and asking questions, turn-taking, and using rich, detailed description and new vocabulary.

A study of second- and third-grade students identified with a reading disability concluded that receptive and expressive vocabulary knowledge were related to pre-reading skills, and listening comprehension skills were found to facilitate word identification (Wise et.al., 2007). Engaging in activities designed to foster vocabulary and listening comprehension may benefit students who struggle in reading.

Research conducted by Miller, Heilmann,, Nockerts, Iglesias, Fabiano, & Francis (2006) indicate that better oral language skills facilitate passage comprehension and word reading, in both Spanish and English. Further, higher English oral language skills are associated with higher Spanish reading scores, and higher Spanish oral language skills are associated with higher English reading scores, indicating a 'cross-language' effect. [102]

[99] Young-Suk, et.al., employed structural equation modeling to investigate the relationships between oral language skills, spelling, letter-writing fluency and writing skills. Oral language (γ=.16, p = .03), spelling, γ=.30, p = < .001), and letter writing fluency (γ=.26, p = < .001) were positively and uniquely related to writing (γ=.26, p = .003). The predictors explained 33% of total variance. The hypothesized model demonstrates a good fit for the data, X^2 (76) = 190.67, p < .001, CFI = .98, TLI = .98 RMSEA = .079, CI= .06 to .09.

[100] General oral language was found to be the sole predictor of 28% of the variance in phonological awareness for nonreaders in Kindergarten; in first grade 42% of the variance in phonological awareness; and in second grade, 41% of the variance in phonological awareness.

[101] Wise, et.al. employed structural equation modeling to investigate the relationship among receptive and expressive vocabulary, listening comprehension, pre-reading skills, word identification skills, and reading comprehension by children identified as disabled in reading. 279 students in 2nd to 3rd grade were administered selected subtests from standardized, norm-referenced assessments (e.g., PPVT, WISC, WIAT) to assess receptive vocabulary, expressive vocabulary, and listening comprehension skills. Pre-reading skills and word identification skills were assessed via selected subtests from standardized, norm-referenced assessments (CTRRPP; SSI; WRMT, WRAT). Findings indicate that receptive vocabulary and expressive vocabulary knowledge evidenced independent and significant paths to pre-reading skills (.29 and .12, respectively). Expressive vocabulary knowledge and listening comprehension skills evidenced independent and significant paths to word identification skills (.19 and .23, respectively). The path from word identification skills to pre-reading skills was significant (.72). The model selected fit the data well, X^2 (21, n = 279) = 56.84, p < .05, X^2 / df = 2.71, NFI = .96, NNFI = .95 CFI = .97, SRMR = .046.

[102] Measures of oral Spanish were found to predict Spanish passage comprehension, accounting for 10% of the variance after accounting for grade. Measures of oral English were found to predict English passage comprehension for Spanish speaking students, accounting for 22% of the variance in reading scores after accounting for grade. Measures of oral English were found to predict Spanish passage comprehension, accounting for 6% of the variance in Spanish reading outcomes. Measures of oral Spanish were found to predict English passage comprehension, accounting for 2% of the variation in English reading comprehension.

Vocabulary Acquisition and Use

Vocabulary is knowledge of the meaning, use, and pronunciation of individual words. It includes both oral vocabulary–words we use in speaking or recognize in listening–and reading vocabulary– words we use or recognize in print. Vocabulary is a key component of comprehension. Before readers can understand the meaning of spoken or written text, they must know what most of the words mean.

Much of our vocabulary knowledge comes from simple exposure to new words in context. However, research has verified that direct instruction in vocabulary–specifically teaching the meaning of new words, and teaching strategies for vocabulary building–has a positive impact on students' language development.

- Link between vocabulary development and reading comprehension. According to the National Reading Panel (NRP), although a direct causal link between vocabulary development and reading comprehension has not been established by research, still a variety of studies "underscore the notion that comprehension gains and improvement on semantic tasks are results of vocabulary learning" (NICHHD, 2000, pp. 4-15, 4-20, citing 7 studies).[103] Similarly, a longitudinal study on early reading development among British schoolchildren found evidence that vocabulary knowledge, as tested at the start of the students' first year of school, was one of three predictors of reading comprehension during the first year, as tested at the start of the students' third year of school–a span of two school years (Muter et al., 2004).[104]
- Effects on specific skill areas. According to a review of research on early childhood reading commissioned by the National Research Council (NRC), "Vocabulary instruction generally does result in measurable increase in students' specific word knowledge. Sometimes and to some degree it also results in better performance on global vocabulary measures, such as standardized tests, indicating that the instruction has evidently enhanced the learning of words beyond those directly taught. Second, pooling across studies, vocabulary instruction also appears to produce increases in children's reading comprehension" (Snow, Burns, & Griffin, 1998, p. 217). Most of the studies reviewed by the NRP occurred within the grades 3–8 range, with only a few studies addressing vocabulary instruction before grade 3. At least five studies reviewed by the NRP supported vocabulary instruction by the third- grade level.[105] The NRC report expanded the grade range of students who can benefit from vocabulary instruction, advocating direct instruction in vocabulary development for "children who have started to read independently, typically second graders and above" so that they will "sound out and confirm the identities of visually unfamiliar words" (Snow, Burns, & Griffin, 1998, p. 322). A review of research conducted by the National Early Literacy Panel indicated that "more complex oral language skills are dependent on vocabulary", and "vocabulary provides the foundation for grammatical knowledge, definitional vocabulary, and listening comprehension (National Institute for Literacy, 2008, p. 75). [106]

It is worth noting that these research findings and recommendations relate specifically to reading vocabulary, and are thus dependent on the development of independent reading skills. In contrast, development of children's oral vocabulary starts much earlier–as soon as children can begin to understand spoken language. Research suggests that, when provided with direct instruction, children in Kindergarten and first-grade can acquire sophisticated vocabulary (Beck & McKeown, 2007).

Although the NRP research did not cover development of oral vocabulary per se, the NRP analysis underscored the fact that development of reading ability is dependent on oral vocabulary: in order for students to understand a word once it has been decoded, it must already be part of their vocabulary (NICHHD, 2000, p. 4-15). Similarly, the NRC report argues that "Learning new concepts and the words that encode them is essential for comprehension development" (Snow, Burns, & Griffin, 1998, p. 217). Based on these factors, it seems reasonable to conclude that even before students can read independently, direct methods for building oral vocabulary may help contribute to students' ultimate success in reading.

Range and Scope of Instruction

- Grade levels. Grade K-2 materials must provide ample instruction and exercise for those students possessing weak vocabulary knowledge, which may include non-native English speakers. The acquisition of academic vocabulary, or Tier 2 words, is of particular emphasis.

Instructional Methods and Features

- Multiple strategies, incorporating direct and indirect vocabulary instruction. Based on research surveyed by the NRP, "It is clear that vocabulary should be taught both directly and indirectly"–that is, using both explicit instruction in vocabulary and methods of decoding word meanings, on the one hand, and more contextual approaches to exposing students to vocabulary on the other (NICHHD, 2000, p. 4-24). Based on both the research results it reviewed and theoretical considerations, the NRP further recommended that reading instruction include a combination of different strategies, both direct and indirect, for building vocabulary, rather than relying on only one method (NICHHD, 2000, p. 4-27).
- Specific instructional methods. The NRP found that a variety of instructional methods led to improvements in student vocabulary, including deriving meaning from context (NICHHD, 2000, p. 4-23, citing 2 studies)[108] and a combination of context-based and definitional approaches (NICHHD, 2000, p. 4-23, citing 2 studies)[109]

"Restructuring the task" of learning new words in a variety of different ways, such as providing redundant information and providing sample sentences along with definitions (NICHHD, 2000, pp. 4-22–4-23, citing 7 studies)[110]

Direct instruction in "vocabulary items that are required for a specific text to be read as part of the lesson" (NICHHD, 2000, pp. 4-24–4-25, citing 4 studies).[111] This includes pre-instruction of vocabulary before the reading or lesson (p. 4-25, citing 3 studies).[112]

- Storybook reading. A body of research evidence shows that "reading storybooks aloud to young children . . . results in reliable gains in incidental word acquisition" (Ewers & Brown-son, 1999, p. 12, citing 5 additional studies).[113]
- Characteristics of effective instructional methods. Summarizing the characteristics of instructional methods that were found to be effective according to the research surveyed, the NRP identified several factors, including the following:

"Richness of context in which words are to be learned," including "extended and rich instruction of vocabulary (applying words to multiple contexts, etc.)" (NICHHD, 2000, pp. 4-22, 4-27). Along similar lines, the NRC report cites a review of studies in which "methods in which children were given both information about the words' definitions and examples of the words' usages in a variety of contexts resulted in the largest gains in both vocabulary and reading comprehension," compared to drill and practice (Snow, Burns, & Griffin, 1998, pp. 217–218, citing Stahl & Fairbanks, 1986). The NRP further recommended that vocabulary items should be "derived from content learning materials" and likely to appear in a variety of other contexts as well (NICHHD, 2000, p. 4-25).

"Active student participation," including activities such as student-initiated talk in the context of listening to storybooks (NICHHD, 2000, pp. 4-21, 426, 4-27). This calls for active student participation supported by the findings of Ewers and Brownson (1999), who reported on a study in which a storybook with 10 targeted vocabulary words was read aloud individually to 66 kindergarteners. After each sentence that included a targeted vocabulary word, readers either would "recast" the target word using a familiar synonym (e.g., after reading "He is wearing his favorite fedora," the reader would say, "He is wearing his favorite hat"), or would ask a what or where question (e.g., "What was he wearing?" with a follow-up question asking "What was the word I used?" if the student answered with a synonym). Pretest-posttest comparison found that students in both treatments learned a significant number of the targeted vocabulary words; however, students in the

active (question-answering) treatment learned significantly more words than those in the passive treatment.[114] This result was true both of students with a high phonological working memory and of those with a low phonological working memory.[115]

"High frequency and multiple, repeated exposures to vocabulary material" (NICHHD, 2000, p. 4-22)

- Assessment. Both the NRP and the NRC report included specific research-based recommendations related to assessment. The NRC report recommended that "Because the ability to obtain meaning from print depends so strongly on the development of word recognition accuracy," this skill "should be regularly assessed in the classroom, permitting timely and effective instructional response" (Snow, Burns, & Griffin, 1998, p. 323).

Based on the variety of measures used to assess student vocabulary and the different results those measures can achieve, the NRP recommended that vocabulary be assessed in multiple ways in the classroom. In particular, they argued that "the more closely the assessment matches the instructional context, the more appropriate the conclusions about the instruction will be" (NICHHD, 2000, p. 4-26).

[103] Beck, Perfetti, & McKeown, 1982; McKeown, Beck, Omanson, & Perfetti, 1983; Wixson, 1986; Carney, Anderson, Blackburn, & Blessing, 1984; Kameenui, Carnine, & Freschi, 1982; Stahl & Fairbanks, 1986; Medo & Ryder, 1993.

[104] Standardized path coefficient for the effect of vocabulary knowledge on reading comprehension = .16, based on a path analysis of factors from all three sets of tests. Chi square (2, N=90) = 3.92, not significant, comparative fit index = 0.992, goodness of fit index = 0.986, root mean square error of approximation = 0.104 (90% confidence interval = 0.000 to 0.257) (p. 675). Vocabulary knowledge was measured by the British Picture Vocabulary Scale II (Dunn, Dunn, Whetton, & Burley, 1997); reading comprehension was measured by the Neale Analysis of Reading Ability II (Neale, 1997). Note that vocabulary knowledge was measured in the first of three annual sets of assessments when students first entered school (average age four years nine months), but was not measured during the second set of assessments. Reading comprehension was measured during the third set of assessments. Thus, vocabulary knowledge from when students first entered school was still a significant predictor of reading comprehension two years later. This held true "even when the effects of early word recognition, phoneme sensitivity, and letter knowledge were controlled" (p. 678). Other significant predictors of reading comprehension were word recognition and grammatical awareness, from the second set of assessments.

[105] Heise, Papalewis, & Tanner, 1991; Levin, Levin, Glasman, & Nordwall, 1992; Eldredge, 1990; Gipe & Arnold, 1979; Rinaldi, Sells, & McLaughlin, 1997.

[106] Results of the meta-analysis discriminate between expressive vocabulary and definitional vocabulary. Analysis indicates relatively weaker correlations for expressive vocabulary and decoding (r = 0.24) and expressive vocabulary and reading comprehension (r = 0.34) pooled across studies. While the authors suggest that "building vocabulary alone is unlikely to be sufficient for improving outcomes not only in literacy but also in oral language itself" they also state that "these results should not be taken to imply that well-developed vocabularies are unimportant for literacy. The results suggest that well-developed vocabularies are insufficient for literacy. More complex oral language skills are dependent upon vocabulary" (p 75). However, stronger correlations are noted for *definitional* vocabulary and decoding (r = 0.38) and *definitional* vocabulary and reading comprehension (r = 0.45).

[107] The article reports on 2 studies with Kindergarten and first-grade children. Study 1 compared the number of sophisticated words learned for children who were directly taught words and children who received no such instruction. The instructed Kindergarten group demonstrated significant gains in vocabulary, $F(1,45) = 15.93$, $p = .000$ as did the first-grade group, $F(1, 51) = 7.25$, $p = .010$. The effect size (*d*) for the Kindergarten and first-grade group equaled 1.17 and .744, respectively. Study 2 assessed whether increasing the length of instructional time had an effect on the number of sophisticated words learned by Kindergarten and first-grade

children. Findings revealed that the number of words increased with length of additional instructional time. For Kindergarten students, $F(1, 35) = 69.47$, $p < .001$. For first-grade students, $F(1, 39) = 64.10$, $p < .001$. The effect size (*d*) for the Kindergarten and first-grade group equaled 2.09 and 2.09, respectively.

[108] Gipe & Arnold, 1979; Tomesen & Aarnoutse, 1998.

[109] Kolich, 1991; Stahl, 1983.

[110] Kameenui, Carnine, & Freschi, 1982; Gordon, Schumm, Coffland, & Doucette, 1992; Schwartz & Raphael, 1985; Scott & Nagy, 1997; Wu & Solman, 1993; Eldredge, 1990; Malone & McLaughlin, 1997.

[111] Tomesen & Aarnoutse, 1998; White, Graves, & Slater, 1990; Dole, Sloan, & Trathen, 1995; Rinaldi, Sells, & McLaughlin, 1997.

[112] Brett, Rothlein, & Hurley, 1996; Wixson, 1986; Carney, Anderson, Blackburn, & Blessing, 1984.

[113] Eller, Pappas, & Brown, 1988; Elley, 1989; Leung & Pikulski, 1990; Senechal, 1997; Senechal & Cornell, 1993.

[114] $F(1, 62) = 19.59$, $p < .01$ (p. 15).

[115] $F(1, 62) = 18.60$, $p < .001$ (p. 16). Level of phonological working memory was determined by administration of the Children's Test of Nonword Repetition (CNRep) (p. 14, citing Gathercole, Willis, Baddeley, & Emslie, 1994).

Conventions of Standard English and Knowledge of Language

Conventions of Standard English include grammatical structures, usage and mechanics, or the 'nuts and bolts' of writing and speaking. For example, students are expected to develop well-constructed sentences that contain correct spelling, punctuation, and grammar. Knowledge of language includes, for example, the ability to select words for effect, compare and contrast varieties of English (e.g., dialects and registers), and differentiate contexts that require formal English from those contexts where informal usage is acceptable and appropriate. In conjunction, students must develop knowledge regarding the 'digital mechanics' of audio-visual formats (Rice, 2008). These are elements that students must master as they increase the range and complexity of encountered text, engage in academic and social discourse, and as they prepare written communications.

The conventions of Standard English and language use and structure extend into all literacy domains, including reading, writing, and speaking and listening. Students benefit from instruction for the following reasons:

- Students who gain control over Standard English grammar, usage, and mechanics are better able to effectively communicate their ideas, knowledge, and opinions through oral discussions and written work.
- Students who gain control over conventions of Standard English grammar, usage, and mechanics can more easily master the use of digital texts than students who lack this control.
- The ability to manipulate the language orally as well as the ability to decode words supports vocabulary development (www.readtennessee.org)

It is recommended that, "an essential element in developing a comprehensive writing policy is the identification of effective instructional procedures, not just at the secondary level…but with younger students as well" (Saddler & Graham, 2005, p 43). The goal of explicit, strategic writing instruction is two-fold: first, to enhance the writing skills all children, from early elementary school on; and second, to minimize the number of children who experience difficulties learning to write (Graham & Harris, 2002).

Range and Scope of Instruction

Graham and Harris (1994) recommend direct, skill-oriented instruction designed to foster text-production skills (e.g., spelling, grammar). For example, fourth-grade students identified as either more or less skilled in their writing benefitted from strategic instruction designed to improve their ability to construct sentences (Saddler & Graham, 2005).[116] Teaching basic skills, such as grammar within the context of writing— instead of teaching them in isolation—has been shown to enhance writing performance (Fearn & Farnan, 2007).[117]

[116] Students receiving instruction in sentence-combining were twice as likely as comparison students to product a correctly written sentence ($F(1, 39) = 31.3$, $MSE = 37.7$, $p = .00$. Findings were similar when sentence combining was assessed via researcher-designed progress monitoring assessments and using a norm-referenced measure of sentence combining.

[117] Four classes were randomly assigned to either the treatment or the control condition. Treatment students participated in a classroom where attention was focused on grammar as an aid in thinking about writing. The authors consider this "directed writing" (p 73). Results were significant for both treatment classrooms, $p < .002$ and $p < .003$.

General Conclusions

General conclusions that can be reached about assessment based on the recommendations of the National Reading Panel (NRP)and the National Research Council (NRC) reports include the following:

- Assessment should guide instruction.
- Assessment should be frequent and/or regular. This was explicitly mentioned for most of the areas.
- Assessment should use appropriate measures.
- This was particularly a concern with fluency and vocabulary.

Area-Specific Conclusions

- Phonemic awareness (PA)–kindergarten assessment based on phoneme recognition; guidance by initial and ongoing assessment at 1st and 2nd grades. A study of kindergartners suggested that PA assessment at this level should focus on phoneme recognition. Additionally, the NRP recommended, based on its research findings, an instructional design in which assessment results drive PA instruction at the 1st and 2nd grade levels, both initially and through ongoing formative assessments. All these research-based recommendations are described in more detail below.

Assessment for kindergarteners based on phoneme recognition. A study of Dutch children analyzing the relationship among several different assessments of PA found that a group-administered phoneme recognition assessment was the "best paper and pencil representative" of PA skill in kindergarten,[118] and that it "equals phoneme segmentation" (an individually administered assessment) in "sensitivity and specificity when predicting later literacy failure" (van Bon & van Leeuwe, 2003, p. 195).[119] These findings suggest that a group-administered assessment based on phoneme recognition can serve as a useful screening tool for identifying the general level of students' PA skills in kindergarten, which in turn is a useful indicator of students who might need targeted PA skills intervention.

Pre-assessment.
Assessments conducted before PA instruction begins should "indicate which children need the instruction and which do not, which children need to be taught rudimentary levels of PA (e.g., segmenting initial sounds in words), and which children need more advanced levels involving segmenting or blending with letters" (NICHHD, 2000, p. 2-6).

Ongoing assessments and instructional time.
In order to determine the length of PA instruction, "What is probably most important is to tailor training time to student learning by assessing who has and who has not acquired the skills being taught as training proceeds" (NICHHD, 2000, p. 2-42). Similarly, a report commissioned by the NRC argued that "intensity of instruction should be matched to children's needs" in acquiring phonological skills (Snow, Burns, & Griffin, 1998, p. 321).

- Phonics–variable, guided by assessment.

Based on their interpretation of the research results, the NRP argued that ideally, phonics instruction should be variable based on the needs of individual students as determined through assessment (NICHHD, 2000, pp. 2-96, 2-97). Similarly, the NRC report argued that "intensity of instruction should be matched to children's needs" in applying explicit instruction on the connection between phonemes and spellings (Snow, Burns, & Griffin, 1998, p. 321).

- Fluency–regular assessment, using research-validated methods. A broad range of research, including both research reviewed by the NRP and research from other sources, describes research-validated measures and provides research-based recommendations for how to use those measures.

Regular assessment.
Based on the research, the NRP recommended that "teachers should assess fluency regularly," using both formal and informal methods (NICHHD, 2000, p. 3-4). Such informal methods can include "reading inventories . . . miscue analysis . . . pausing indices . . . running records . . . and reading speed calculations" (NICHHD, 2000, p. 3-9, citing 5 studies).[120] Similarly, the NRC report recommended that "Because the ability to obtain meaning from print depends so strongly on the development of . . . reading fluency," fluency "should be regularly assessed in the classroom, permitting timely and effective instructional response" (Snow, Burns, & Griffin, 1998, p. 323).

Validity of oral reading fluency measures. According to Hasbrouck and Tindal (2006), measuring student oral reading fluency in terms of words correct per minute "has been shown, in both theoretical and empirical research, to serve as an accurate and powerful indicator of overall reading competence, especially in its correlation with comprehension. The validity and reliability of these measures has been well established in a body of research extending over the past 25 years" (citing Fuchs, Fuchs, Hosp, & Jenkins, 2001; Shinn, 1998). For example, Fuchs et al. (2001) summarized research showing that measures of oral reading fluency involving text passages that were several paragraphs in length corresponded well with "traditional, commercial, widely used tests of reading comprehension" (p. 243), and were superior in this regard to reading words from a list,[121] measures of silent fluency,[122] and more direct measures of reading comprehension.[123] More specifically, several studies have shown that third-grade tests of oral reading fluency from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) correlated well to high-stakes reading assessments from Arizona,[124] Colorado,[125] Florida,126 North Carolina,127 and Oregon.

Oral reading fluency norms. Based on analysis of assessment data from a pool ranging from approximately 3,500 to more than 20,000 students collected between 2000 and 2005, Hasbrouck and Tindal (2006) have developed a new set of oral reading fluency norms to replace the widely used norms that were published in 1992 (Hasbrouck & Tindal, 1992). The new norms "align closely with both those published in 1992, and also closely match the widely used DIBELS norms . . . and those developed by Edformation with their AIMSweb system . . . with few exceptions." These new norms cover grades 1-8, and provide information for 90th, 75th, 50th, 25th, and 10th percentile rankings. The researchers also provided specific norm-related recommendations for using oral reading results for screening, diagnosis, and monitoring student progress:

– Screening. According to the authors, "fluency based assessments have been proven to be efficient, reliable, and valid indicators of reading proficiency when used as screening measures" (citing Fuchs et al., 2001; Good, Simmons, & Kame'enui, 2001).

For screening in grades 2-8, the authors recommended that "a score falling within 10 words above or below the 50th percentile should be interpreted as within the normal, expected, and appropriate range for a student at that grade level at that time of year."

For screening in grade 1, the authors recommended following guidelines established by Good et al. (2002) that identified students reading at or above 40 words correct per minute (wcpm) by the end of the school year as being "at low risk of reading difficulty," students reading at 20–40 wcpm as being "at some risk," and students reading below 20 wcpm as being "at high risk of failure."

– Diagnosis According to the authors, oral reading fluency norms "can play a useful role in diagnosing possible problems that are primarily fluency based."

– Monitoring progress. According to the authors, oral reading fluency measures "have been found by many educators to be better tools for making decisions about students' progress than traditional standardized measures which can be time-consuming, expensive, are only administered infrequently, and have limited

instructional utility" (citing Good et al., 2001; Tindal & Marston, 1990). Fuchs et al. (2001) provided a similar, research-based description of how oral reading fluency can be used to monitor student progress, both across and within individual student performance.

For monitoring student progress, Hasbrouck and Tindal (2006) recommended that students scoring within 10 wcpm of the 50th percentile at or above grade level should be "considered as making adequate progress in reading, unless there are other indicators that would raise concern." Such students "may only need to have their reading progress monitored a few times per year to determine if they are meeting the benchmark standards that serve as predictors of reading success."

For students reading below grade level, the authors suggested more frequent oral reading fluency assessments: once or twice monthly to once a week, depending on the severity of the problem, with scores graphed against goals and with adjustments to the instructional program if a student falls short of needed progress for three or more consecutive assessments (citing Hasbrouck et al., 1999).

- Vocabulary–regular assessment in multiple ways. Both the NRP and the NRC report included specific research-based recommendations related to assessment.

The NRC report identified word recognition accuracy as a skill that "should be regularly assessed in the classroom," with assessment results used to guide instruction (Snow, Burns, & Griffin, 1998, p. 323).

Based on the variety of measures used to assess student vocabulary and the different results those measures can achieve, the NRP recommended that vocabulary be assessed in multiple ways in the classroom. In particular, they argued that "the more closely the assessment matches the instructional context, the more appropriate the conclusions about the instruction will be" (NICHHD, 2000, p. 4-26).

- Text comprehension–regular assessment. According to the NRC report, "Conceptual knowledge and comprehension strategies should be regularly assessed in the classroom," with teachers tailoring instruction accordingly "where difficulty or delay is apparent" (Snow, Burns, & Griffin, 1998, p. 323). The NRP did not directly address assessment of text comprehension.

[118] A confirmatory structural analysis using linear structured relations (LISREL) was conducted on assessments administered in May/June of kindergarten (Time 1) and March of grade 1 (Time 2), producing a factor loading score for each of eight PA assessments carried out during the Time 1 administration (four of which were also repeated at Time 2). The analysis also included an Early Reading Test at Time 1 and a spelling test and two portions of the Three-Minute Test (a standardized word reading test) at Time 2. The highest loading factor among Time 1 PA tests was for phoneme segmentation (.91), followed by phoneme recognition (.78), one of two phoneme counting measures (.72), phoneme blending (.70), the second of two phoneme counting measures (.57), phoneme deletion (.50), rhyme judgment (.49), and pseudoword repetition (.40) (p. 206). Analysis also showed a single common factor underlying PA scores, which "is closely related to literacy performance" (p. 209).

[119] "Averaged over reading and spelling, maximum specificity of maximum sensitivity was 46% for Phoneme Segmentation and 47% for Phoneme Recognition. Conversely, choosing 80% as the desired level of specificity, the average sensitivity was found to be 45% for Phoneme Recognition whereas Phoneme Segmentation did not even attain an 80% level of specificity. Maximum Phoneme Segmentation specificity averaged over the three literacy measures was 65%, associated with 77% sensitivity (cf. 75% sensitivity at the same specificity level for Phoneme Recognition). This shows that both the Phoneme Segmentation and Phoneme Recognition Tests tend to identify too many children at kindergarten as running the risk of meeting with literacy problems in Grade 1 and that Phoneme Recognition is not inferior to Phoneme Segmentation in that respect" (p. 213).

[120] Johnson, Kress, & Pikulski, 1987; Goodman & Burke, 1972; Pinnell et al., 1995; Clay, 1972; Hasbrouck & Tindal, 1992.

[121] Jenkins, Fuchs, van den Broek, Espin, & Deno (2003) compared measures of oral reading fluency of (a) connected text (a folktale), and (b) a context-free word list (list of words from the folktale) to performance on the Iowa Test of Basic Skills (ITBS) subtest for reading comprehension for 113 fourth graders. Fuchs et al. found that speed of oral reading from the folktale correlated more strongly to the ITBS score than did speed of oral reading from the word list (criterion validity coefficients of .83 and .54, respectively; the difference was statistically significant, $t(110) = 7.86$, $p < .001$) (p. 723).

[122] Fuchs, Fuchs, Eaton, & Hamlett (2000) compared measures of oral and silent reading speed with "the number of questions answered correctly on the passages that had been read" and with the raw score on the Iowa Test of Basic Skills (ITBS) subtest for reading comprehension (Fuchs et al., 2001, p. 247, summarizing Fuchs et al., 2000). They found that "For silent reading, the correlation with the questions answered on the passage was .38, and with the Iowa test, it was .47. For oral reading, the correlation with the passage questions was .84, and with the Iowa test, it was .80. So, correlations for the oral reading fluency score were substantially and statistically significantly higher than for the silent reading fluency scores" (Fuchs et al., 2001, p. 247; p values not reported).

[123] Fuchs, Fuchs, & Maxwell (1988) compared measures of oral reading fluency, short-answer question answering, passage recall, and cloze (all based on the same 400-word passages) with the Reading Comprehension subtest of the Stanford Achievement Test for 70 middle school and junior high school students with reading disabilities. They found that "Criterion validity coefficients (average correlations across the different scoring methods) for the question answering, the recall, and the cloze measures were .82, .70, and .72, respectively. The coefficient for oral reading fluency was .91. Tests for differences between these correlations demonstrated that the correlation for oral reading fluency was significantly higher than the correlation for each of the three direct measures of reading comprehension" (Fuchs et al., 2001, p. 244, summarizing Fuchs et al., 1988; p-values not reported). Additionally, according to Fuchs et al. (2001), "high correlations have also been documented for nondisabled elementary school age children within a variety of studies that (a) incorporated different criterion measures of reading accomplishment, (b) examined within-grade as well as across-grade coefficients, and (c) used instructional level as well as a fixed level of text across students" (p. 245, citing as research reviews Hosp & Fuchs, 2000; Marston, 1989).

[124] "The correlation between [Arizona Instrument to Measure Standards] and [DIBELS oral reading fluency assessment] for the overall group was . . . $r = .741$," based on scores of 241 third graders (Wilson, 2005; p-value not reported).

[125] The DIBELS oral reading fluency assessment was administered three times: in fall, winter, and spring. The fall and winter administrations each had a correlation coefficient of .73 with the spring assessment of the Colorado State Assessment Program (CSAP). The spring administration of DIBELS oral reading fluency assessment had a correlation of .80 with CSAP (Shaw & Shaw, 2002; p-values not reported). Each correlation was based on the scores of more than 50 third graders.

[126] "There was a significant correlation between [DIBELS oral reading fluency] scores and reading [Florida Comprehensive Assessment Test–Sunshine State Standards] scores ($r = .70$, $p < .001$) . . . and reading scores on the [Florida Comprehensive Assessment Tests norm-referenced test] ($r = .74$, $p < .001$)," based on scores of 1,102 third grade students (Buck & Torgesen, 2003).

[127] "The correlation between [DIBELS oral reading fluency] Spring scores and [North Carolina] End of Grade reading scores was . . . $r = .73$," based on scores of 38 third-grade students (Barger, 2003; no p-value reported)